

Oracle® Exalogic Elastic Cloud Multirack Cabling Guide



Release EL X2-2, X3-2, X4-2, X5-2, and X6-2

E89294-01

August 2017

The Oracle logo, consisting of the word "ORACLE" in white, uppercase, sans-serif font, centered within a solid red square.

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Oracle Exalogic Elastic Cloud Multitrack Cabling Guide, Release EL X2-2, X3-2, X4-2, X5-2, and X6-2

E89294-01

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Preface

This guide describes multirack cabling and configuration scenarios for the Oracle Exalogic machine, which is an integrated cloud machine comprising hardware and software. It includes information about hardware operations and site planning.

Note:

All hardware-related specifications in this guide are based on information for a typical deployment provided by Oracle at the time this guide was written. Oracle is not responsible for hardware problems that may result from following the average specifications in this document. For detailed information about preparing your site for multirack cabling and setup, consult your Oracle representative.

This preface contains the following sections:

- [Audience](#)
- [Revision History](#)
- [Documentation Accessibility](#)
- [Related Documents](#)
- [Conventions](#)

Audience

This guide is intended for Oracle Exalogic machine administrators and network administrators.

It is assumed that the readers of this manual have knowledge of the following:

- System administration concepts
- Hardware and networking concepts

Revision History

- **E18481-08: February 2014**
 - Added [Multirack Cabling Diagrams for Exalogic-to-Exalogic Scenarios](#) .
 - Added [Multirack Cabling Diagrams for Exalogic-to-Exadata Scenarios](#) .

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Related Documents

For more information, see the following documents:

- *Oracle Exalogic Elastic Cloud Machine Owner's Guide*
- *Oracle Fusion Middleware Exalogic Enterprise Deployment Guide*
- *Oracle Exalogic Release Notes*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Multirack Cabling Overview

This chapter describes the Exalogic Machine multirack cabling service. It contains the following sections:

- [About the Multirack Cabling Service](#)
- [Multirack Cabling Scenarios](#)
- [Port Usage in InfiniBand Switches](#)
- [Multirack Cabling Tasks](#)

1.1 About the Multirack Cabling Service

The multirack cabling service allows you to extend the capability of the Exalogic rack systems to beyond just a single rack. The multirack cabling service allows you to cable up to eight Exalogic machine full racks together, without requiring any external InfiniBand switches.

It is assumed that all racks are adjacent to each other, in a side-by-side configuration. If racks are not side-by-side, then you may need to purchase longer cables for the extended connections. Placing the racks in any configuration other than side-by-side may require you to purchase additional 10-meter cables. Cable lengths across computer room aisles can vary from site to site, and may increase the difficulty of determining the cable lengths that you may need to purchase.

1.2 Multirack Cabling Scenarios

You can use the multirack cabling service to connect an Exalogic machine with one or more Exalogic machines, or with one or more Exadata Database Machines. This guide discusses in detail how to perform multirack cabling tasks in the following scenarios:

- Connecting an Exalogic machine full rack to another Exalogic machine full rack, as described in [Connecting Two Exalogic Machines](#)
- Connecting an Exalogic machine full rack to an Exadata Database Machine full rack, as described in [Connecting Exalogic and Exadata Machines](#)
- Connecting an Exalogic machine quarter rack to an Exadata Database Machine quarter rack, as described in [Connecting Exalogic and Exadata Machines](#)

[Multirack Cabling Diagrams for Exalogic-to-Exalogic Scenarios](#) contains network connectivity diagrams for one Exalogic machine connected to another Exalogic machine, and for the scenario where eight Exalogic full racks are connected.

[Multirack Cabling Diagrams for Exalogic-to-Exadata Scenarios](#) contains network connectivity diagrams for one Exalogic machine connected to one Exadata machine.

Any combination of up to eight racks of Exalogic machines or Exadata Database Machines can be connected together. If you need to connect a combination of more than eight Exalogic machine full racks or Exadata Database Machine full racks, you will require additional switches, such as an M9-648 port modular switch. A detailed

discussion of such scenarios is beyond the scope of this guide. For more information, please contact Oracle Support.

For detailed information about the hardware components of the Exalogic machine and the rack layout, see the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*.

1.3 Port Usage in InfiniBand Switches

All configurations of the Exalogic machine (full, half, quarter, and eighth rack) include Sun Network QDR InfiniBand Gateway Switches. Only the Exalogic machine full rack and half rack configurations include a Sun Datacenter InfiniBand Switch 36.

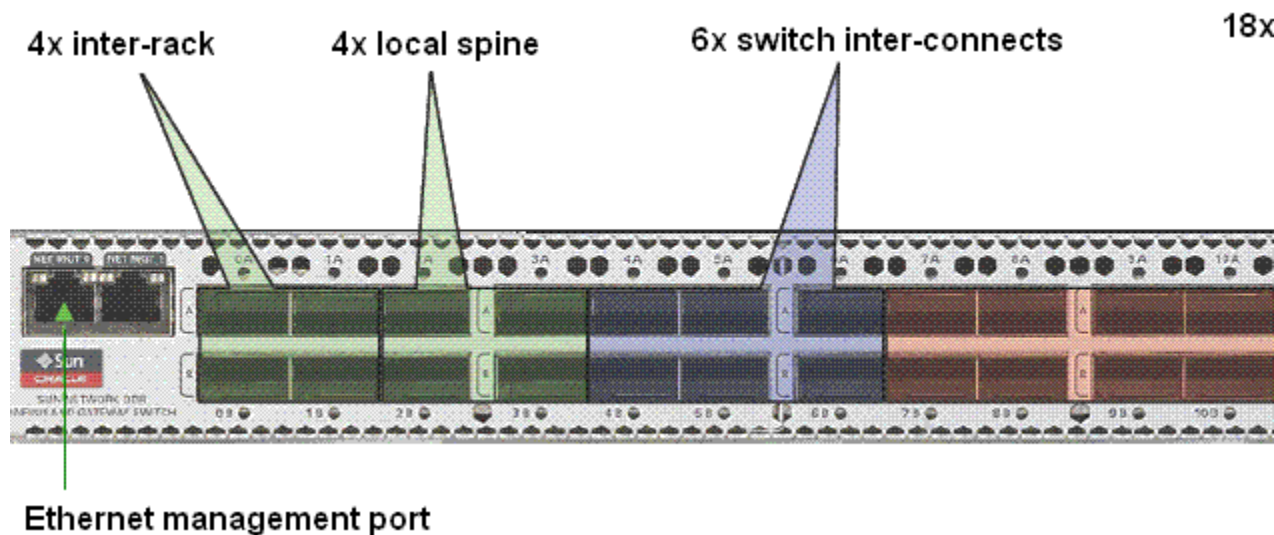
This section discusses the port usage in the following InfiniBand switches in multirack configuration scenarios:

- [Port Usage in NM2-GW](#)
- [Port Usage in NM2-36P](#)

1.3.1 Port Usage in NM2-GW

[Figure 1-1](#) illustrates the port usage in each of the Sun Network QDR InfiniBand Gateway Switches (NM2-GW).

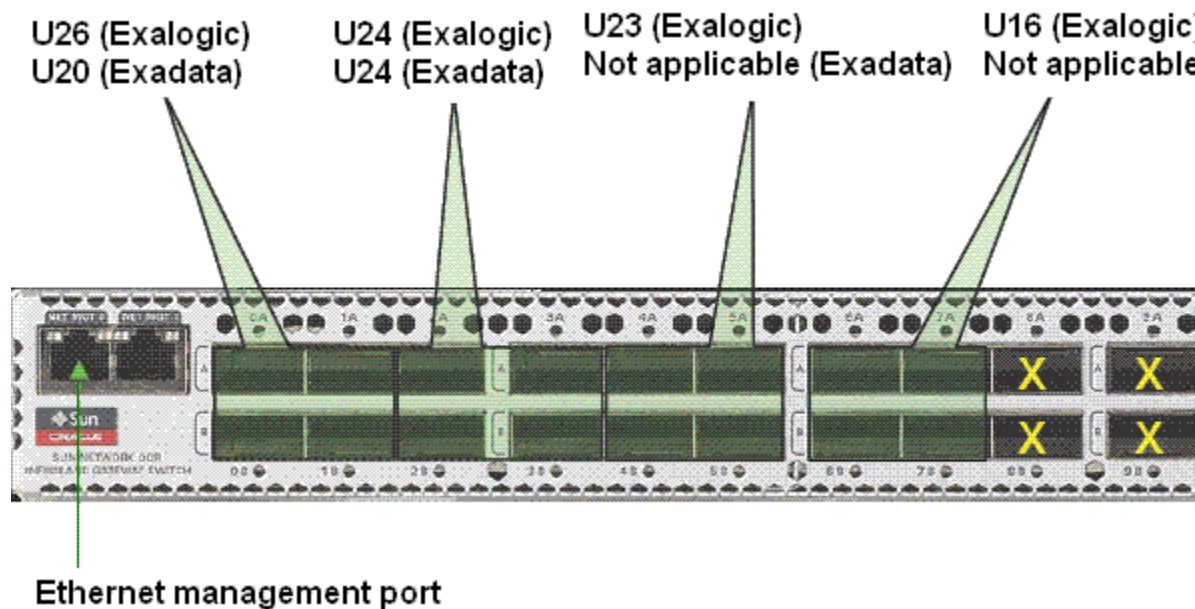
Figure 1-1 Port Usage/Connection Groups for NM2-GW in Multirack Scenarios



1.3.2 Port Usage in NM2-36P

[Figure 1-2](#) illustrates the port usage in the Sun Datacenter InfiniBand Switch 36 (NM2-36P), which is included in Exalogic machine full rack and half rack configurations.

Figure 1-2 Port Usage/Connection Groups for NM2-36P in Multirack Scenarios



1.4 Multirack Cabling Tasks

Before cabling an Exalogic machine rack for multiple rack operation, you must know the system configuration and obtain all the prerequisite information for system installation. It is assumed that all Exalogic machine racks have been properly installed and verified. If you are connecting an Exalogic machine to an Exadata Database Machine, ensure that both Exalogic machine and Exadata Database Machine are installed and verified.

Procedures in this guide assume that the racks are next to each other.

Before you begin installing an Exalogic machine, perform pre-installation planning. Complete the checklists in the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*. Verify the site space, access route, power, grounding, air flow, and network requirements that are provided in the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*.

Install Exalogic machine racks if the cabling service is performed as part of an initial installation. To install an Exalogic machine, follow the instructions in the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*. Ensure that you read the entire guide before beginning installation, and follow all safety precautions.

Perform the following multirack cabling tasks, in order, after completing the installation process:

- Review safety considerations.
- Perform the preliminary tasks:
 - [Preparing a Multirack Cabling Plan](#)
 - [Verifying Host Names and Addresses](#)
 - [Performing a Cable Inventory](#)
 - [Gathering the Required Tools](#)

- Perform the cabling tasks:
 - Shutting Down the Affected Exalogic Machines and Exadata Database Machines
 - Handling Inter-Switch Cables
 - Extracting Spare InfiniBand Cables
 - Unbundling the Inter-Switch Cables
 - Applying Cable and Rack Labels
 - Connecting the Cables
 - Bundling the Cables
 - Inspecting the Cables
 - Verifying the Multirack Systems

2

Safety Considerations

This chapter describes important safety considerations that you should review before Exalogic machine cabling begins.

The following topics are covered:

- [Equipment Safety Precautions](#)
- [InfiniBand Cable Cautions](#)
- [Preparing the Cabling Site](#)
- [Observing the Safety Guidelines and Warnings](#)

2.1 Equipment Safety Precautions

Observe the following precautions when cabling Exalogic machines. Otherwise, the equipment can be damaged or a malfunction can result.

- Do not block any ventilation holes.
- Do not place cables under the equipment or have cables stretched tight. Also, do not disconnect a power cord from the equipment while its power is on.
- When disconnecting a LAN cable, you might not be able to reach the connector lock with your fingers. If that is the case, press the connector lock with a slotted screwdriver to disconnect the cable. You could damage the system board if you force your fingers into the gap rather than using a slotted screwdriver.
- Do not place anything on top of the system or perform any work directly above it.
- Take measures to prevent static electricity from being generated at the installation location. Note especially that static electricity is likely to be generated on carpets, and this could lead to a malfunction.
- Do not insert anything into any opening in the Exalogic machine. The Exalogic machine contains high-voltage parts. If a metal object or another conductor is inserted into an opening in the machine, it can cause a short circuit that could cause fire, electric shock, or equipment damage.
- For details on maintenance of the servers, contact a certified service engineer.

2.2 InfiniBand Cable Cautions

Caution - Fiber optic InfiniBand cables with laser transceivers **must** be of a type Class I.

Caution - Do not allow any copper core InfiniBand cable to bend tighter than a 5 inch (127 mm) radius. Do not allow any optical InfiniBand cable to bend tighter than a 3.4 inch (85 mm) radius. Tight bends can damage the cable internally.

Caution - Do not use zip ties to bundle or support InfiniBand cables. The sharp edges of the ties can damage the cables internally. Use hook and loop straps.

Caution - Do not allow any InfiniBand cable to experience extreme tension. Do not pull on an InfiniBand cable or allow it to drag. Unroll an InfiniBand cable for its length. Pulling on an InfiniBand cable can damage the cables internally.

Caution - Do not twist an InfiniBand cable more than one revolution for its entire length. Twisting an InfiniBand cable can damage the cable internally.

Caution - Do not route InfiniBand cables where they might be stepped upon or experience rolling loads. Such a crushing effect can damage the cable internally.

2.2.1 InfiniBand Cable Path Lengths

When handling a cable, consider the following:

- Bends in the cable path increase the required cable length. Bends in the cable path are usually necessary, and each bend increases the total length. Rarely does a cable travel in a straight line from connector to connector.
- Bundling increases the required length of the cables. Bundling causes one or more cables to follow a common path. However, the bend radius is different in different parts of the bundle. If the bundle is large and unorganized, and there are many bends, one cable might experience only the inner radius of bends, while another cable might experience the outer radius of bends. In this situation, the differences of the required lengths of the cables are quite substantial.
- If you are routing the InfiniBand cables under the floor, consider the height of the raised floor.

2.2.2 InfiniBand Cable Bundling

When bundling InfiniBand cables in groups, use hook-and-loop straps to keep cables organized. If possible, use color-coordinated straps to help identify cables and their routing. The InfiniBand 4X copper conductor cables are fairly thick and heavy for their length. Consider the retention strength of the hook-and-loop straps when supporting cables. Bundle as few cables as reasonably possible.

You can bundle the cables using many hook-and-loop straps. Place the hook-and-loop straps as close together as reasonably possible, for example, every 1 foot (0.3 m). If a cable breaks free from a strap, the cable cannot fall far before it is retained by another strap. If the InfiniBand cables break free of their straps and fall free, the cables might break internally when they strike the floor or are jerked from tension.

2.2.3 Floor and Underfloor Delivery of InfiniBand Cables

The switch accepts InfiniBand cables from floor or underfloor delivery. Floor and underfloor delivery limits the tension in the InfiniBand cable to the weight of the cable for the rack height of the switch.

Note - Overhead cabling details are not included in this guide. For details on overhead cabling, contact a certified service engineer.

2.3 Preparing the Cabling Site

It is the customer's responsibility to prepare the site prior to multirack cabling of Exalogic machines. Refer to the *Oracle Exalogic Elastic Cloud Machine Owner's*

Guide for any server or equipment you plan to install in the rack for additional site preparation requirements.

Before installing Exalogic machines, perform the following tasks:

1. Thoroughly clean and vacuum the area in preparation for the installation.
2. Note any problems or peculiarities at the site that require special equipment.
3. Verify that the installation site flooring has a high enough strength rating to withstand the combined weight of an Exalogic machine and any installed equipment.
4. Install all necessary electrical equipment and ensure that sufficient power is provided.

Refer to the *Sun Rack II Power Distribution Units User's Guide* for the power requirements of the Sun Rack II power distribution units (PDUs).

5. Ensure that the installation site provides adequate air conditioning.
6. Operate the air conditioning system for 48 hours to bring the room to the appropriate temperature.

2.4 Observing the Safety Guidelines and Warnings

Before installing the Exalogic machine, or installing any server or equipment into the rack, read the *Important Safety Information for Sun Hardware Systems* document included with the rack.

Observe all safety notices printed on the packaging and listed in the *Sun Rack II Safety and Compliance Guide* and the *Sun Rack II Power Distribution Units Users Guide*. Go to <http://docs.sun.com> to download these guides.

Note:

Contact your service representative to confirm that your equipment is qualified for installation and use in an Exalogic machine. Oracle is not liable for any issues when you install or use non-qualified equipment.

3

Preparing for Multirack Cabling

This chapter describes the preliminary tasks you must complete before you begin to cable multiple Exalogic machines together or a combination of Exalogic machines and Exadata Database Machines together, but after rack installation.

The following topics are covered:

- [Preparing a Multirack Cabling Plan](#)
- [Verifying Host Names and Addresses](#)
- [Performing a Cable Inventory](#)
- [Gathering the Required Tools](#)

3.1 Preparing a Multirack Cabling Plan

Determine the number of Exalogic machine racks that you will connect.

See the appropriate section in this guide for a table that provides connection details for each supported multirack cabling option. Print the applicable chart, so you can have it readily available.

The system naming conventions are as follows. "R" indicates an Exalogic machine rack or an Exadata Database Machine rack. For example, R1 indicates rack 1. "U" indicates the unit height in the rack. For example, U24 indicates rack unit 24. U1 is located at the bottom of the rack, and U42 is at the top of the rack. For more information about Exalogic machine rack layout, see the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*.

3.2 Verifying Host Names and Addresses

Before installing the extended cabling, complete Exalogic machine network configuration to ensure that the networking is complete and the system will not have any addressing conflicts. For more information about network configuration for Exalogic machines, see the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*.

Verify that the installed Exalogic machine racks have been assigned unique host names and addresses. All compute nodes in all interconnected Exalogic machine racks must have unique addresses and names.

You should consider extending the IP addresses and naming conventions for interconnected racks of Exalogic machines. Extending the names to include a rack value such as name `[Rack#]ComputeNode_01` allows you and Oracle repair personnel to identify the source of diagnostic messages that may be displayed.

3.3 Performing a Cable Inventory

Collect and inventory the cables you ordered, if any. You should inventory spare cables from the kit and the existing multirack cables. Each Exalogic machine includes a kit of spare parts.

Some spare cables are used for multirack cabling. The following table lists the spare cables available for the switch, and their length.

No additional InfiniBand cables need to be purchased when connecting an Exalogic machine full rack with another Exalogic machine full rack or with an Exadata Database Machine. The 5-meter cables provided in the spares kit with each Exalogic machine can be used for making the connections.

You can use some cables in the spare parts pool for multirack cabling.

 **Note:**

For Exalogic machine full racks, 16 QSFP passive copper cables of length 5 meter, with part number 594-6387-01, are included in the spare kit. These cables are intended for multirack cabling.

3.4 Gathering the Required Tools

Gather the following tools:

- Pen
- Notepad
- Flashlight
- Magnifying glass
- Label maker and labels (for cables, KVM console, and rack)
- Cable ties (hook-and-loop straps suggested)

4

Multirack Cabling Tasks

This chapter describes multirack cabling tasks. The following topics are covered:

- [Shutting Down the Affected Exalogic Machines and Exadata Database Machines](#)
- [Handling Inter-Switch Cables](#)
- [Extracting Spare InfiniBand Cables](#)
- [Unbundling the Inter-Switch Cables](#)
- [Applying Cable and Rack Labels](#)
- [Connecting the Cables](#)
- [Bundling the Cables](#)
- [Inspecting the Cables](#)
- [Verifying the Multirack Systems](#)

4.1 Shutting Down the Affected Exalogic Machines and Exadata Database Machines

Before you can set up the multirack cabling, you must first shut down the affected Exalogic machines and Exadata Database Machines. Consider the operational impact of shutting down the systems, and take appropriate action. Refer to the *Oracle Exalogic Elastic Cloud Machine Owner's Guide* and the Exadata Database Machine documentation for shutdown procedures.

4.2 Handling Inter-Switch Cables

Caution - Be careful when you handle InfiniBand cables. InfiniBand cables are very fragile. The cable ends might break off if the ends are dropped, or mishandled in any way. Before you handle any InfiniBand cables, you should be aware of all handling instructions. Read and follow **Important Guidelines When Handling InfiniBand Cables**. This document is included in the packaging of any new cables purchased. Or, go to <http://docs.sun.com> to access this document.

4.3 Extracting Spare InfiniBand Cables

A spare cable bundle is provided with Exalogic machines. Extract the spare InfiniBand cables from the bundle. You need to use the InfiniBand cables only. Restore spare Ethernet cables to the original spares location. You do not use the Ethernet cables.

4.4 Unbundling the Inter-Switch Cables

Unbundle the inter-switch cables. Remove the cable ties holding the cables together, such as hook-and-loop fasteners. Lay the cables out **gently** in collections of like length. Observe safety precautions. Be careful when handling the cables to avoid cable damage.

4.5 Applying Cable and Rack Labels

Re-label all inter-rack cables from leaf switches to spine switches. Re-label each cable to identify the correct locations at both cable ends, so that cables can be connected correctly during future maintenance. Label all cables using the following convention:

Rack[#]LeafSW[#]Port[#] -> Rack[#]SpineSW[#]Port[#]

When labeling racks, label all installed Exalogic machines (or a combination of Exalogic machine and Exadata Database Machine) according to the plan you prepared in the previous chapter.

4.6 Connecting the Cables

Procedures to connect cables are discussed in the following chapters:

- [Connecting Two Exalogic Machines](#)
- [Connecting Exalogic and Exadata Machines](#)

Tip:

Verify the required number of cables and cable lengths. Procedures in this guide assume that the racks are next to each other. Label the cables, on both ends. Use the labeling format described in the cabling tables located in the appendices at the end of this document.

4.7 Bundling the Cables

Bundle the cables together. Be sure and leave the last 18 inches free so that you can maneuver cables into position near the leaf switch or the spine switch. You should probably wait until each of the bundles is installed into its final position before you connect them together.

4.8 Inspecting the Cables

Perform a visual inspection to confirm that the leaf switches and spine switches in each rack (Exalogic machines and Exadata Database Machine) have the correct number of InfiniBand connections. You should also verify that the ports in the leaf switch are occupied. You should also verify that each spine switch has the correct number of cables coming into it.

4.9 Verifying the Multirack Systems

After you have cabled and visually inspected the systems, start your Exalogic Machines and Exadata Database Machines, as appropriate. Refer to the *Oracle Exalogic Elastic Cloud Machine Owner's Guide* and the Exadata Database Machine documentation for start-up procedures. In addition, Oracle recommends that you verify the InfiniBand topology after connecting multiple racks. For information about verifying the InfiniBand fabric and discovering the topology, see the *Oracle Exalogic Elastic Cloud Machine Owner's Guide* and the Oracle Exadata Database Machine documentation.

5

Connecting Two Exalogic Machines

This chapter describes how to connect two Exalogic machines on the same InfiniBand fabric.

It includes the following topics:

- [Before You Begin](#)
- [Connecting Two Exalogic Machine Full Racks Together](#)

5.1 Before You Begin

Before you start connecting multiple Exalogic machines together, ensure that you have completed all of the multirack cabling tasks described in [Multirack Cabling Tasks](#).

5.2 Connecting Two Exalogic Machine Full Racks Together

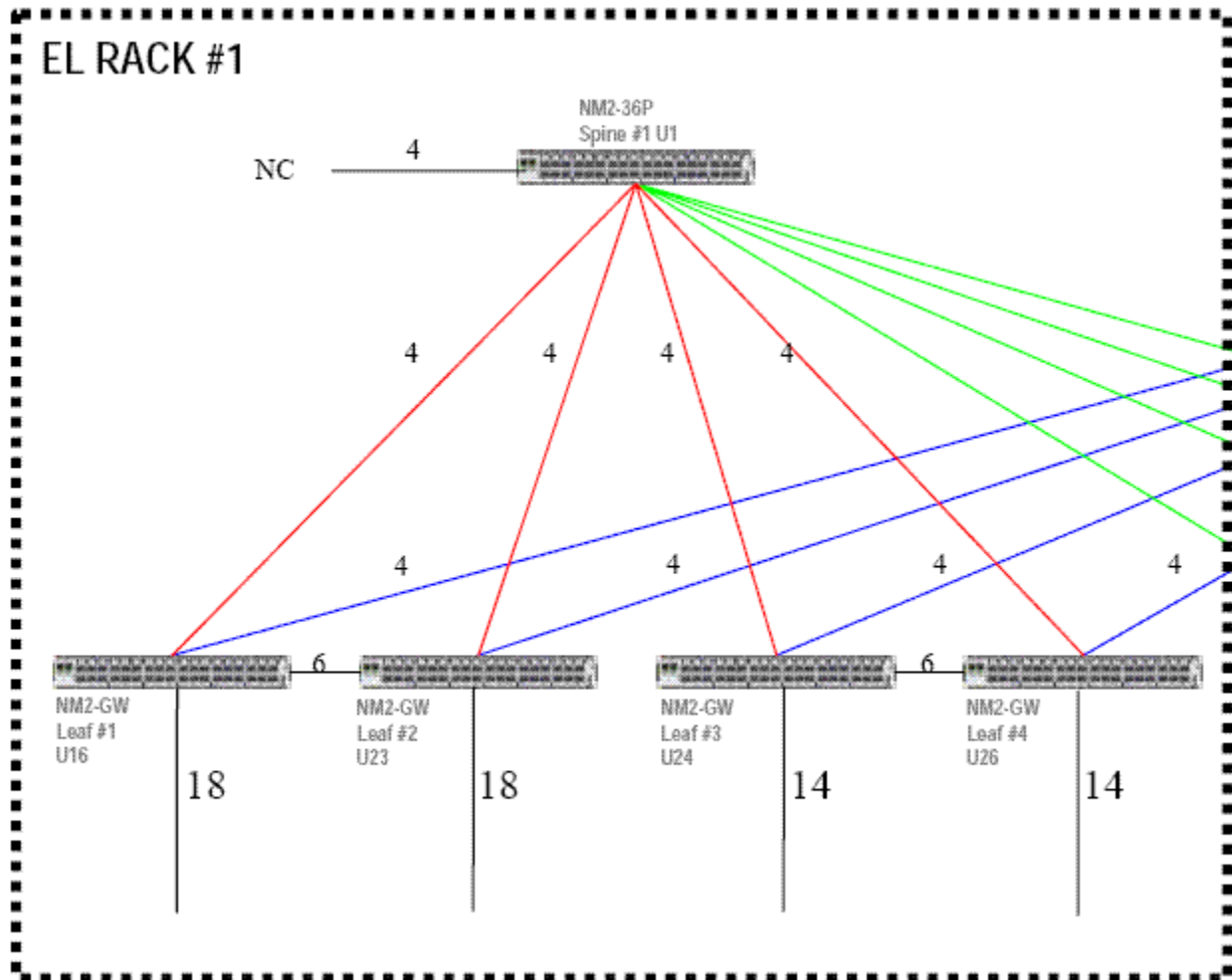
This section discusses how to connect two Exalogic machine full racks together. It contains the following topics:

- [Connectivity Diagram](#)
- [Connect Two Exalogic Machine Full Racks Together](#)

5.2.1 Connectivity Diagram

[Figure 5-1](#) shows how an Exalogic machine full rack is connected to another Exalogic machine full rack.

Figure 5-1 Connectivity Between Two Exalogic Machine Full Racks in a Multirack Scenario



Sun Network QDR InfiniBand Gateway Switch (NM2-GW) 4x4 (four switches in each Exalogic machine full rack) cross-connects are recabled to their respective local spine switches Sun Datacenter InfiniBand Switch 36 (NM2-36P). See the red connecting lines in [Figure 5-1](#).

In addition, each leaf switch is connected to the other rack's spine switch. For example, leaf switches in rack 1 are connected to the spine switch in rack 2. See the blue and green connecting lines in [Figure 5-1](#).

5.2.2 Connect Two Exalogic Machine Full Racks Together

Connecting an Exalogic machine full rack to another Exalogic machine full rack involves the following steps:

1. [Remove the Factory-Installed Cables](#)
2. [Remove Cables Between Gateway Switches](#)
3. [Connect Each Leaf Switch to the Spine Switch](#)
4. [Connect Each Leaf Switch in One Exalogic Rack to Spine Switches in the Other Exalogic Rack](#)

5.2.2.1 Remove the Factory-Installed Cables

[Table 5-1](#) lists the factory-installed Exalogic machine cross-connects (cables) that should be removed. Remove these cables in each of the Exalogic machine full racks that will be connected on the same InfiniBand fabric.

The system naming conventions are as follows. "R" indicates an Exalogic machine rack or an Exadata Database Machine rack. For example, R1 indicates rack 1. "U" indicates the unit height in the rack. For example, U24 indicates rack unit 24. U1 is located at the bottom of the rack, and U42 is at the top of the rack. For more information about Exalogic machine rack layout, see the *Oracle Exalogic Elastic Cloud Machine Owner's Guide*.

Table 5-1 Remove Factory-Installed Cross-Connects in Exalogic Machines

Cable Coming from Slot	Port	Connecting to Slot	Port	Length
U16	0A	U26	0A	2 meter
U16	0B	U26	0B	2 meter
U16	1A	U26	1A	2 meter
U16	1B	U26	1B	2 meter
U16	2A	U24	2A	2 meter
U16	2B	U24	2B	2 meter
U16	3A	U24	3A	2 meter
U16	3B	U24	3B	2 meter
U23	0A	U24	0A	1 meter
U23	0B	U24	0B	1 meter
U23	1A	U24	1A	1 meter
U23	1B	U24	1B	1 meter
U23	2A	U26	2A	1 meter
U23	2B	U26	2B	1 meter
U23	3A	U26	3A	1 meter
U23	3B	U26	3B	1 meter

 **Note:**

Remove the factory-installed cables as shown in [Table 5-1](#) from both Exalogic machines.

5.2.2.2 Remove Cables Between Gateway Switches

You must remove the cables connected in ports 4A, 4B, 5A, 5B, 6A, and 6B between gateway switches in both the racks.

5.2.2.3 Connect Each Leaf Switch to the Spine Switch

[Table 5-2](#) lists the 3-meter cables that should be used to connect leaf switches (NM2-GW) to the spine switch (NM2-36P) in the Exalogic machine rack. The 3-meter cables are bundled with the Exalogic machine. You should connect leaf switches to the spine switches in each of the Exalogic machine full racks that will be connected.

Table 5-2 Connect 3-Meter Cables from Each Leaf Switch to the Spine Switch

Cable Coming from Slot	Port	Connecting to Slot	Port	Length
U26	0A	U1	1A	3 meter
U26	0B	U1	1B	3 meter
U26	1A	U1	2A	3 meter
U26	1B	U1	2B	3 meter
U24	0A	U1	3A	3 meter
U24	0B	U1	3B	3 meter
U24	1A	U1	4A	3 meter
U24	1B	U1	4B	3 meter
U23	0A	U1	5A	3 meter
U23	0B	U1	5B	3 meter
U23	1A	U1	6A	3 meter
U23	1B	U1	6B	3 meter
U16	0A	U1	7A	3 meter
U16	0B	U1	7B	3 meter
U16	1A	U1	8A	3 meter
U16	1B	U1	8B	3 meter

 **Note:**

Make the connections between leaf switches and spine switch as shown in [Table 5-2](#) for both Exalogic machines.

5.2.2.4 Connect Each Leaf Switch in One Exalogic Rack to Spine Switches in the Other Exalogic Rack

[Table 5-3](#) lists the 5-meter cables (or longer) that should be used to connect leaf switches (NM2-GW) from each Exalogic machine full rack to the spine switches (NM2-36P) in the other Exalogic machine full rack. The 5-meter cables are bundled with the Exalogic machine.

Table 5-3 Connect 5-Meter Cable One Rack's Leaf Switches to the Second Rack's Spine Switch

Cable Coming from Slot	Port	Connecting to Slot	Port	Length
R1-U26	2A	R2-U1	9A	5 meter
R1-U26	2B	R2-U1	9B	5 meter
R1-U26	3A	R2-U1	10A	5 meter
R1-U26	3B	R2-U1	10B	5 meter
R1-U24	2A	R2-U1	11A	5 meter
R1-U24	2B	R2-U1	11B	5 meter
R1-U24	3A	R2-U1	12A	5 meter
R1-U24	3B	R2-U1	12B	5 meter
R1-U23	2A	R2-U1	13A	5 meter
R1-U23	2B	R2-U1	13B	5 meter
R1-U23	3A	R2-U1	14A	5 meter
R1-U23	3B	R2-U1	14B	5 meter
R1-U16	2A	R2-U1	15A	5 meter
R1-U16	2B	R2-U1	15B	5 meter
R1-U16	3A	R2-U1	16A	5 meter
R1-U16	3B	R2-U1	16B	5 meter

 **Note:**

Connect leaf switches in each Exalogic machine full rack to the spine switch in the other Exalogic machine full rack, as shown in [Table 5-3](#).

For network connectivity diagrams of other Exalogic-to-Exalogic scenarios, see [Multirack Cabling Diagrams for Exalogic-to-Exalogic Scenarios](#).

6

Connecting Exalogic and Exadata Machines

This chapter describes how to connect Exalogic machine racks and Exadata Database Machine racks on the same InfiniBand fabric. It includes the following topics:

- [Before You Begin](#)
- [Connecting an Exalogic Machine Full Rack and an Exadata Database Machine Full Rack](#)
- [Connecting an Exalogic Machine Quarter Rack and an Exadata Database Machine Quarter Rack](#)

6.1 Before You Begin

Before you start connecting Exalogic machines and Exadata Database Machines, ensure that you have completed all of the multirack cabling tasks, as described in [Multirack Cabling Tasks](#).

6.2 Connecting an Exalogic Machine Full Rack and an Exadata Database Machine Full Rack

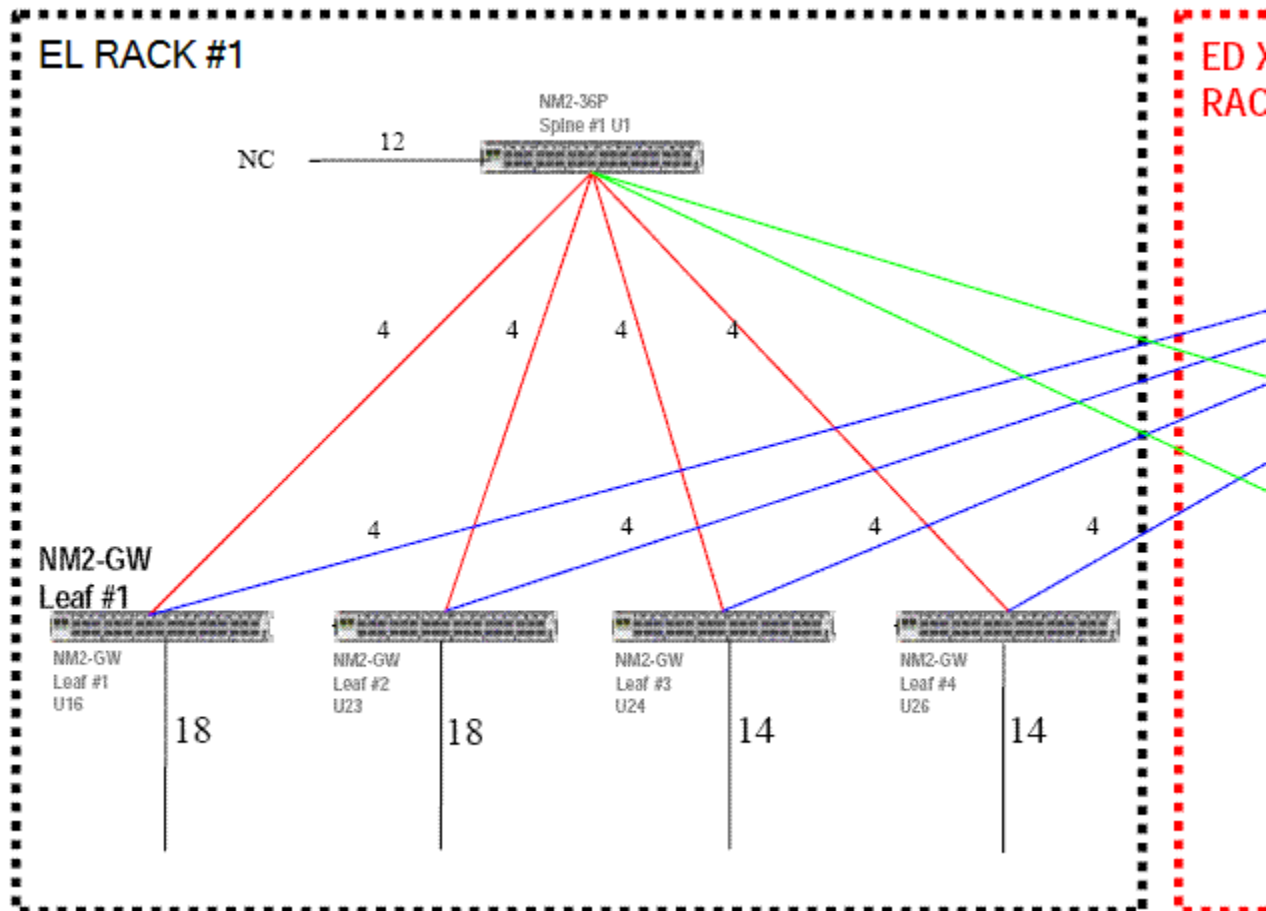
This section contains the following topics:

- [Connectivity Diagram](#)
- [Connecting an Exalogic Machine Full Rack and an Exadata Database Machine Full Rack](#)

6.2.1 Connectivity Diagram

[Figure 6-1](#) shows how an Exalogic machine full rack is connected to an Exadata Database Machine full rack.

Figure 6-1 Connectivity Between Exalogic Machine Full Rack and Exadata Database Machine Full Rack in a Multirack Scenario



Each Sun Network QDR InfiniBand Gateway Switch (NM2-GW) in the Exalogic machine full rack is connected to its local spine switch (Sun Datacenter InfiniBand Switch 36 (NM2-36P)). See the red connecting lines in [Figure 6-1](#) (EL Rack #1).

Then each leaf switch in the Exadata Database Machine full rack is connected to its local spine switch. See the red connecting lines in [Figure 6-1](#) (ED X2-2 Rack #2).

Subsequently, each leaf switch in the Exalogic machine full rack is connected to the spine switch of the Exadata Database Machine. See the blue connecting lines in [Figure 6-1](#).

Finally, each leaf switch in the Exadata Database Machine is connected to the spine switch of the Exalogic machine. See the green connecting lines in [Figure 6-1](#).

6.2.2 Connecting an Exalogic Machine Full Rack and an Exadata Database Machine Full Rack

Connecting an Exalogic machine full rack to an Exadata Database Machine full rack involves the following steps:

1. [Removing Factory-Installed Cables \(Cross-Connects\) in Exalogic Machine Full Rack](#)

2. [Removing Factory-Installed Cables \(Cross-Connects\) in Exadata Database Machine Full Rack](#)
3. [Connecting Each Leaf Switch in Exalogic Machine Full Rack to Its Spine Switch](#)
4. [Connecting Each Leaf Switch in Exadata Database Machine Full Rack to Its Spine Switch](#)
5. [Connecting Exalogic Leaf Switches to Spine Switch of Exadata Database Machine](#)
6. [Connecting Leaf Switches of Exadata Database Machine to Spine Switch of Exalogic Machine](#)

6.2.2.1 Removing Factory-Installed Cables (Cross-Connects) in Exalogic Machine Full Rack

[Table 6-1](#) lists the factory-installed Exalogic machine cross-connects (cables) that should be removed.

The system naming conventions are as follows. "R" indicates an Exalogic machine rack. For example, R1 indicates rack 1. "U" indicates the unit height in the rack. For example, U24 indicates rack unit 24. U1 is located at the bottom of the rack, and U42 is at the top of the rack. For more information about Exalogic machine rack layout, see the Oracle Exalogic Elastic Cloud Machine Owner's Guide.

Table 6-1 Factory-Installed Cross-Connects in Exalogic Machine to be Removed

Cable Coming from Slot (Exalogic Machine)	Port	Connecting to Slot (Exalogic Machine)	Port	Length
R1-U16	0A	R1-U26	0A	2 meter
R1-U16	0B	R1-U26	0B	2 meter
R1-U16	1A	R1-U26	1A	2 meter
R1-U16	1B	R1-U26	1B	2 meter
R1-U16	2A	R1-U24	2A	2 meter
R1-U16	2B	R1-U24	2B	2 meter
R1-U16	3A	R1-U24	3A	2 meter
R1-U16	3B	R1-U24	3B	2 meter
R1-U23	0A	R1-U24	0A	1 meter
R1-U23	0B	R1-U24	0B	1 meter
R1-U23	1A	R1-U24	1A	1 meter
R1-U23	1B	R1-U24	1B	1 meter
R1-U23	2A	R1-U26	2A	1 meter
R1-U23	2B	R1-U26	2B	1 meter

Table 6-1 (Cont.) Factory-Installed Cross-Connects in Exalogic Machine to be Removed

Cable Coming from Slot (Exalogic Machine)	Port	Connecting to Slot (Exalogic Machine)	Port	Length
R1-U23	3A	R1-U26	3A	1 meter
R1-U23	3B	R1-U26	3B	1 meter

 **Note:**


R1 in [Table 6-1](#) indicates an Exalogic machine full rack that is being connected to an Exadata Database Machine full rack

6.2.2.2 Removing Factory-Installed Cables (Cross-Connects) in Exadata Database Machine Full Rack

[Table 6-2](#) lists the factory-installed Exadata Database Machine cross-connects (cables) that should be removed.

Table 6-2 Factory-Installed Cross-Connects in Exadata Database Machine to be Removed

Cable Coming from Slot (Exadata Database Machine)	Port	Connecting to Slot (Exadata Database Machine)	Port	Length
R2-U20	8A	R2-U24	8A	2 meter
R2-U20	9A	R2-U24	9B	2 meter
R2-U20	9B	R2-U24	9A	2 meter
R2-U20	10A	R2-U24	10B	2 meter
R2-U20	10B	R2-U24	10A	2 meter
R2-U20	11A	R2-U24	11B	2 meter
R2-U20	11B	R2-U24	11A	2 meter
R2-U24	8B	R2-U1	0B	3 meter
R2-U20	8B	R2-U1	1B	3 meter

 **Note:**
R2 in [Table 6-2](#) indicates an Exadata Database Machine full rack that is being connected to an Exalogic machine full rack (R1).

6.2.2.3 Connecting Each Leaf Switch in Exalogic Machine Full Rack to Its Spine Switch

[Table 6-3](#) lists the 3-meter cables that should be used to connect leaf switches (NM2-GW) to the spine switch (NM2-36P) in the Exalogic machine rack. The 3-meter cables are bundled with the Exalogic machine. Only Exalogic machine full rack and half rack configurations include a spine switch in U1. The spine switch is not connected by default.

Table 6-3 Connect 3-Meter Cables from Each Leaf Switch to the Spine Switch in Exalogic Machine Full Rack

Cable Coming from Slot (Exalogic Machine)	Port	Connecting to Slot (Exalogic Machine)	Port	Length
R1-U26	0A	R1-U1	3A	3 meter
R1-U26	0B	R1-U1	3B	3 meter
R1-U26	1A	R1-U1	4A	3 meter
R1-U26	1B	R1-U1	4B	3 meter
R1-U24	0A	R1-U1	5A	3 meter
R1-U24	0B	R1-U1	5B	3 meter
R1-U24	1A	R1-U1	6A	3 meter
R1-U24	1B	R1-U1	6B	3 meter
R1-U23	0A	R1-U1	7A	3 meter
R1-U23	0B	R1-U1	7B	3 meter
R1-U23	1A	R1-U1	8A	3 meter
R1-U23	1B	R1-U1	8B	3 meter
R1-U16	0A	R1-U1	9A	3 meter
R1-U16	0B	R1-U1	9B	3 meter
R1-U16	1A	R1-U1	10A	3 meter
R1-U16	1B	R1-U1	10B	3 meter

 **Note:**

R1 in [Table 6-3](#) indicates an Exalogic machine full rack that is being connected to an Exadata Database Machine full rack.

6.2.2.4 Connecting Each Leaf Switch in Exadata Database Machine Full Rack to Its Spine Switch

[Table 6-4](#) lists the 3-meter cables that should be used to connect leaf switches to the spine switch (NM2-36P) in the Exadata Database Machine full rack. The 3-meter cables are bundled with the Exadata Database Machine.

Table 6-4 Connect 3-Meter Cables from Each Leaf Switch in Exadata Database Machine to Spine Switch in Exadata Database Machine

Cable Coming from Slot (Exadata Database Machine)	Port	Connecting to Slot (Exadata Database Machine)	Port	Length
R2-U20	8A	R2-U1	11B	3 meter
R2-U20	8B	R2-U1	12B	3 meter
R2-U20	9A	R2-U1	13B	3 meter
R2-U20	9B	R2-U1	14B	3 meter
R2-U24	8A	R2-U1	11A	3 meter
R2-U24	8B	R2-U1	12A	3 meter
R2-U24	9A	R2-U1	13A	3 meter
R2-U24	9B	R2-U1	14A	3 meter

 **Note:**

R2 in [Table 6-4](#) indicates an Exadata Database Machine full rack that is being connected to an Exalogic machine full rack (R1).

6.2.2.5 Connecting Exalogic Leaf Switches to Spine Switch of Exadata Database Machine

[Table 6-5](#) lists the 5-meter cables that should be used to connect leaf switches (NM2-GW) to the spine switch (NM2-36P) in the Exalogic machine rack. The 3-meter cables are bundled with the Exalogic machine. The spine switch is not connected by default.

Table 6-5 Connect 5-Meter Cables from Each Leaf Switch to the Spine Switch in Exalogic Machine Full Rack

Cable Coming from Slot (Exalogic Machine)	Port	Connecting to Slot (Exadata Database Machine)	Port	Length
R1-U26	2A	R2-U1	3A	5 meter
R1-U26	2B	R2-U1	3B	5 meter
R1-U26	3A	R2-U1	4A	5 meter
R1-U26	3B	R2-U1	4B	5 meter
R1-U24	2A	R2-U1	5A	5 meter
R1-U24	2B	R2-U1	5B	5 meter
R1-U24	3A	R2-U1	6A	5 meter
R1-U24	3B	R2-U1	6B	5 meter
R1-U23	2A	R2-U1	7A	5 meter
R1-U23	2B	R2-U1	7B	5 meter
R1-U23	3A	R2-U1	8A	5 meter
R1-U23	3B	R2-U1	8B	5 meter
R1-U16	2A	R2-U1	9A	5 meter
R1-U16	2B	R2-U1	9B	5 meter
R1-U16	3A	R2-U1	10A	5 meter
R1-U16	3B	R2-U1	10B	5 meter

Note:

R1 in [Table 6-5](#) indicates an Exalogic machine full rack that is being connected to an Exadata Database Machine full rack (R2).

6.2.2.6 Connecting Leaf Switches of Exadata Database Machine to Spine Switch of Exalogic Machine

[Table 6-6](#) lists the 5-meter cables that should be used to connect leaf switches of Exadata Database Machine to the spine switch (NM2-36P) of the Exalogic machine full rack. The 5-meter cables are bundled with the Exadata Database Machine.

Table 6-6 Connect 5-Meter Cables from Each Leaf Switch of Exadata Database Machine to the Spine Switch of Exalogic Machine

Cable Coming from Slot (Exadata Database Machine)	Port	Connecting to Slot (Exalogic Machine)	Port	Length
R2-U20	10A	R1-U1	11B	5 meter
R2-U20	10B	R1-U1	12B	5 meter
R2-U20	11A	R1-U1	13B	5 meter
R2-U20	11B	R1-U1	14B	5 meter
R2-U24	10A	R1-U1	11A	5 meter
R2-U24	10B	R1-U1	12A	5 meter
R2-U24	11A	R1-U1	13A	5 meter
R2-U24	11B	R1-U1	14A	5 meter

Note:

R2 in [Table 6-6](#) indicates an Exadata Database Machine full rack that is being connected to an Exalogic machine full rack (R1).

6.3 Connecting an Exalogic Machine Quarter Rack and an Exadata Database Machine Quarter Rack

In this multirack configuration scenario, all connections with both racks will remain as they are when delivered to the site. No connections will be moved or removed to make the cross connections. In addition, a spine switch in either rack is not required.

All cross-connections between the Exalogic machine quarter rack and the Exadata Database Machine quarter rack are made using the four Infiniband switch ports 1[a,b] and 2[a,b]. [Table 6-7](#) describes the connections between the leaf switches of the two racks being connected.

Table 6-7 Cross-Connections Between Exalogic Machine Quarter Rack and Exadata Database Machine Quarter Rack

Exadata Database Machine		Exalogic Machine	
Leaf Switch	Port	Leaf Switch	Port
R2-U24	1A	R1-U23	1A
R2-U24	1B	R1-U23	1B

Table 6-7 (Cont.) Cross-Connections Between Exalogic Machine Quarter Rack and Exadata Database Machine Quarter Rack

Exadata Database Machine		Exalogic Machine	
Leaf Switch	Port	Leaf Switch	Port
R2-U24	2A	R1-U16	2A
R2-U24	2B	R1-U16	2B
R2-U20	1A	R1-U16	1A
R2-U20	1B	R1-U16	1B
R2-U20	2A	R1-U23	2A
R2-U20	2B	R1-U23	2B

Note:

R2 in [Table 6-7](#) indicates an Exadata Database Machine full rack that is being connected to an Exalogic machine full rack (R1).

In [Table 6-7](#), ports 1A and 1B are horizontal connections across the two machine racks being connected (top leaf switch to top leaf switch). Ports 2A and 2B are the cross connections between the racks (top leaf switch to bottom leaf switch).

You require only 8 cables to connect an Exalogic machine quarter rack and an Exadata Database Machine. If these systems are side by side, you can use the 5-meter Infiniband cables included in the spares kit to complete these connections.

For network connectivity diagrams of other Exalogic-to-Exadata scenarios, see [Multirack Cabling Diagrams for Exalogic-to-Exadata Scenarios](#).

A

Multirack Cabling Diagrams for Exalogic-to-Exalogic Scenarios

This appendix contains multirack cabling diagrams for the following scenarios:

- One Exalogic machine with another Exalogic machine, as listed in [Table A-1](#).
- Eight Exalogic machines, as described in [Connecting Eight Exalogic Full Racks](#).

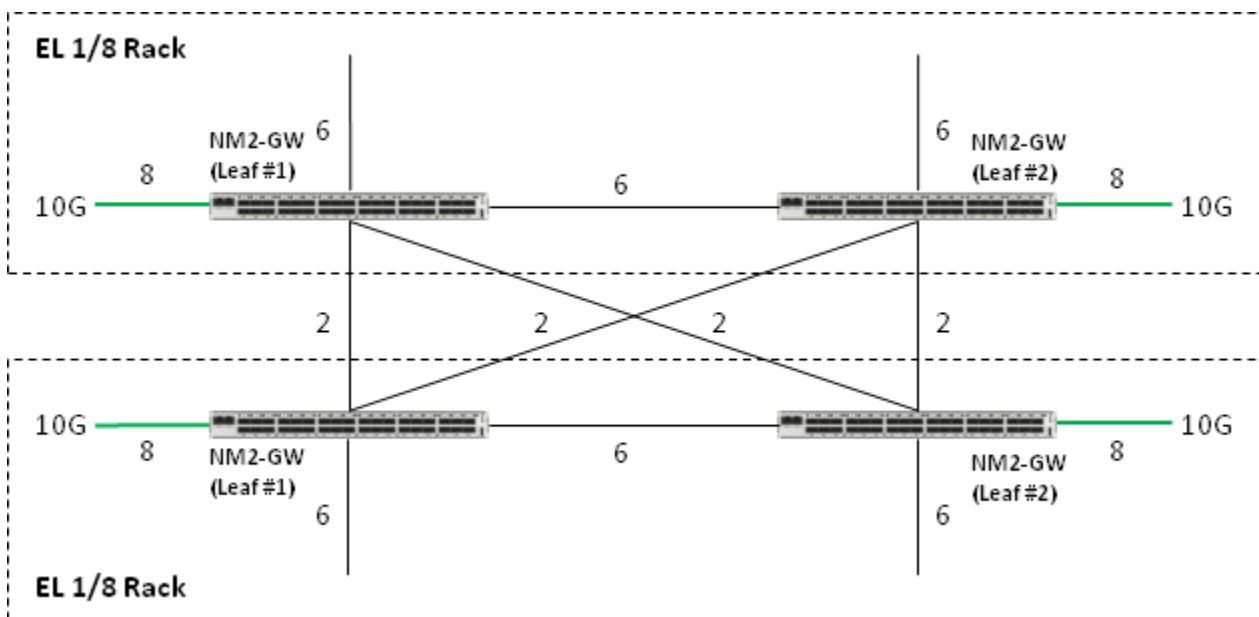
Table A-1 Exalogic-to-Exalogic Multirack Cabling Scenarios

Exalogic Machine Rack Type	Exalogic Machine Rack Type	Section
1/8	1/8	Connecting Two Exalogic Eighth Racks
1/8	1/4	Connecting an Exalogic Eighth Rack and Exalogic Quarter Rack
1/8	1/2	Connecting an Exalogic Eighth Rack and Exalogic Half Rack
1/8	Full	Connecting an Exalogic Eighth Rack and Exalogic Full Rack
1/4	1/4	Connecting Two Exalogic Quarter Racks
1/4	1/2	Connecting an Exalogic Quarter Rack and an Exalogic Half Rack
1/4	Full	Connecting an Exalogic Quarter Rack and an Exalogic Full Rack
1/2	1/2	Connecting Two Exalogic Half Racks
1/2	Full	Connecting an Exalogic Half Rack and an Exalogic Full Rack
Full	Full	Connecting Two Exalogic Full Racks

A.1 Connecting Two Exalogic Eighth Racks

[Figure A-1](#) illustrates how two Exalogic eighth racks are connected on the same InfiniBand fabric.

Figure A-1 Two Exalogic Eighth Racks

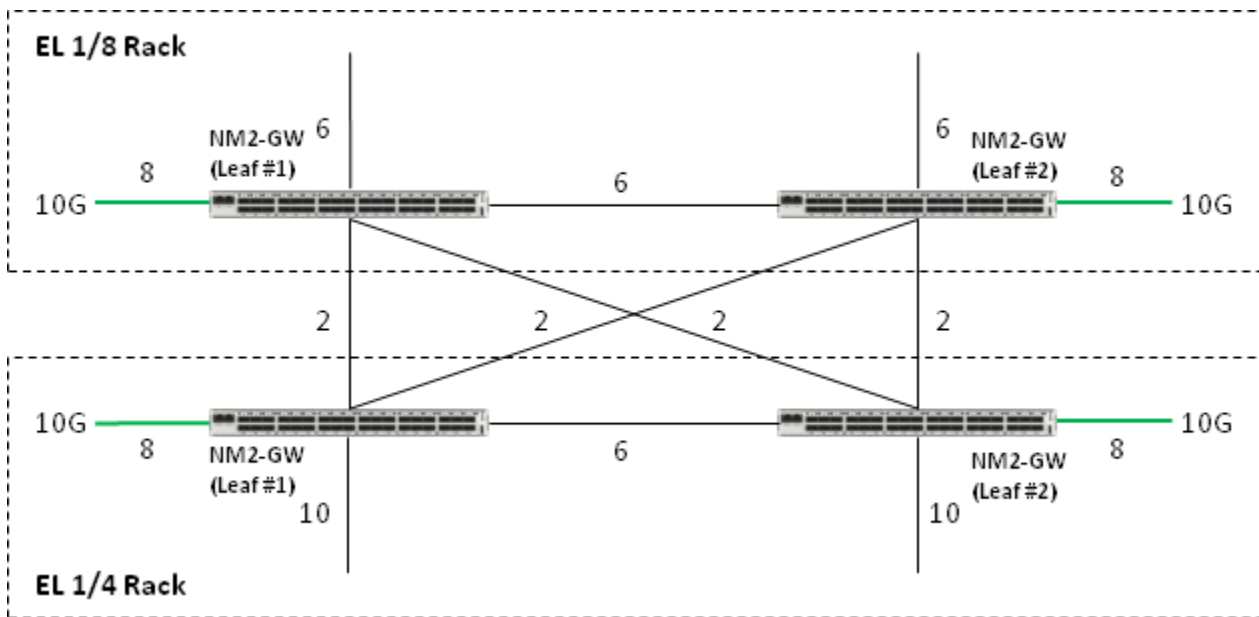


In Figure A-1, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches).

A.2 Connecting an Exalogic Eighth Rack and Exalogic Quarter Rack

Figure A-2 illustrates how an Exalogic eighth rack is connected to an Exalogic quarter rack on the same InfiniBand fabric.

Figure A-2 Exalogic Eighth Rack and Exalogic Quarter Rack

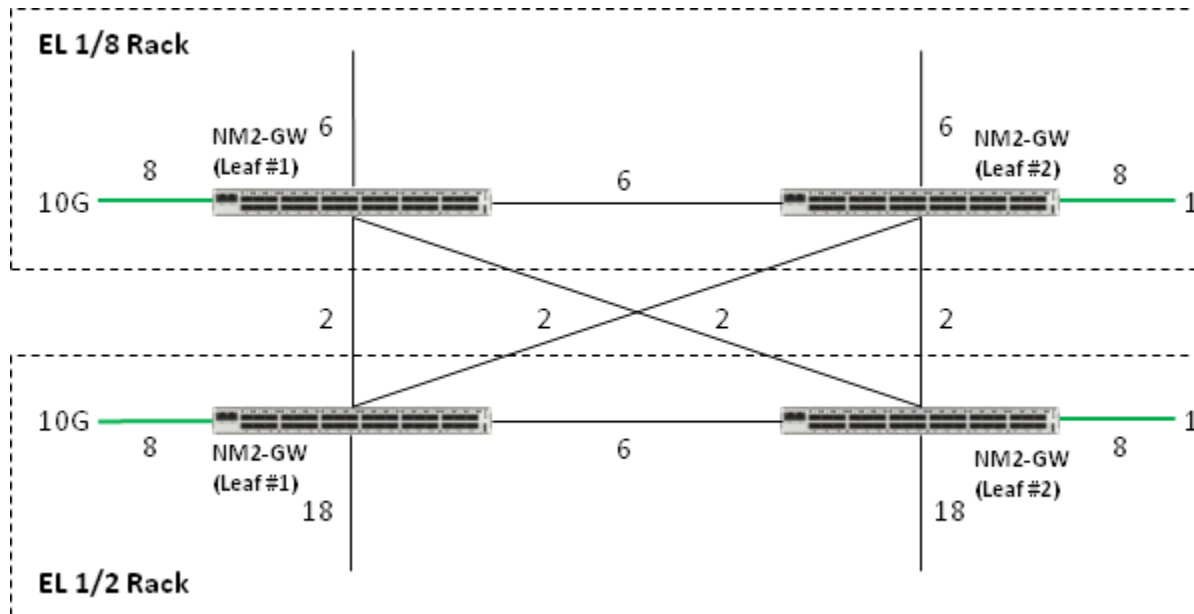


In Figure A-2, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches).

A.3 Connecting an Exalogic Eighth Rack and Exalogic Half Rack

Figure A-3 illustrates how an Exalogic eighth rack is connected to an Exalogic half rack on the same InfiniBand fabric.

Figure A-3 Exalogic Eighth Rack and Exalogic Half Rack

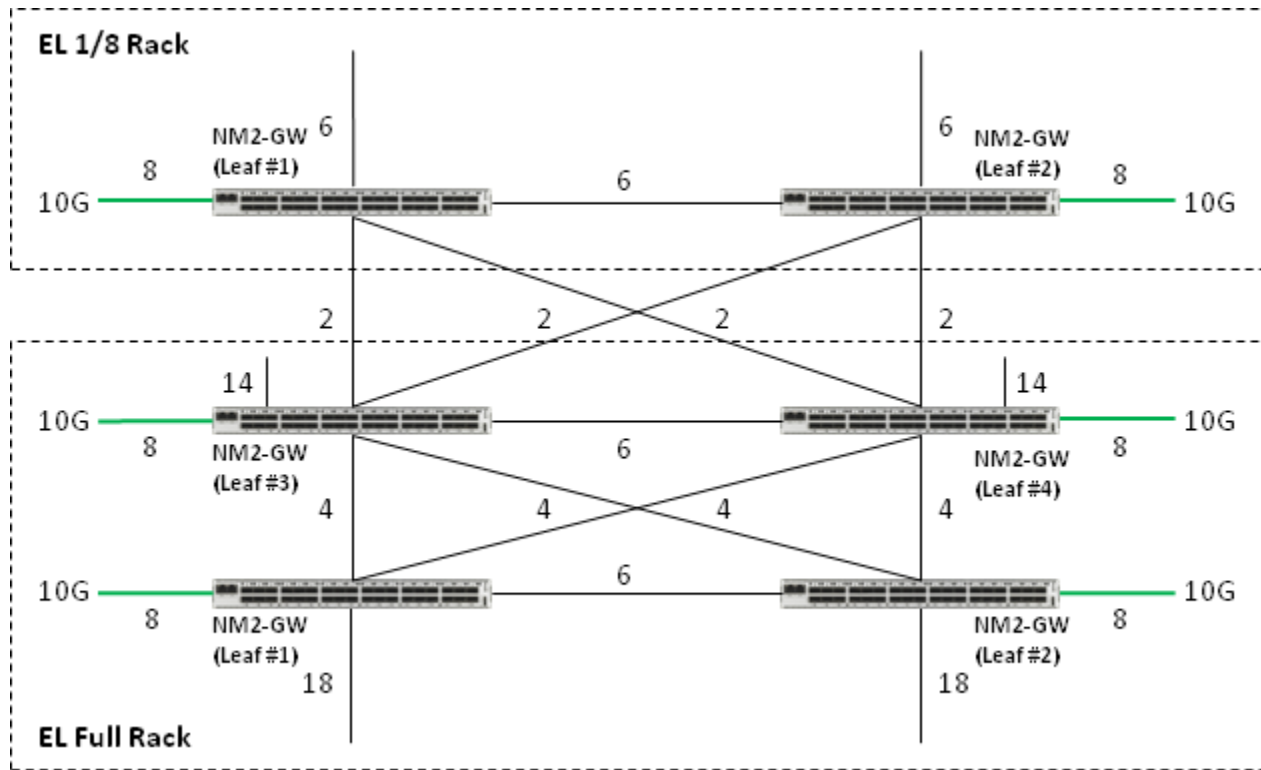


In Figure A-3, NM2-GW represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches)

A.4 Connecting an Exalogic Eighth Rack and Exalogic Full Rack

Figure A-4 illustrates how an Exalogic eighth rack is connected to an Exalogic full rack on the same InfiniBand fabric.

Figure A-4 Exalogic Eighth Rack and Exalogic Full Rack

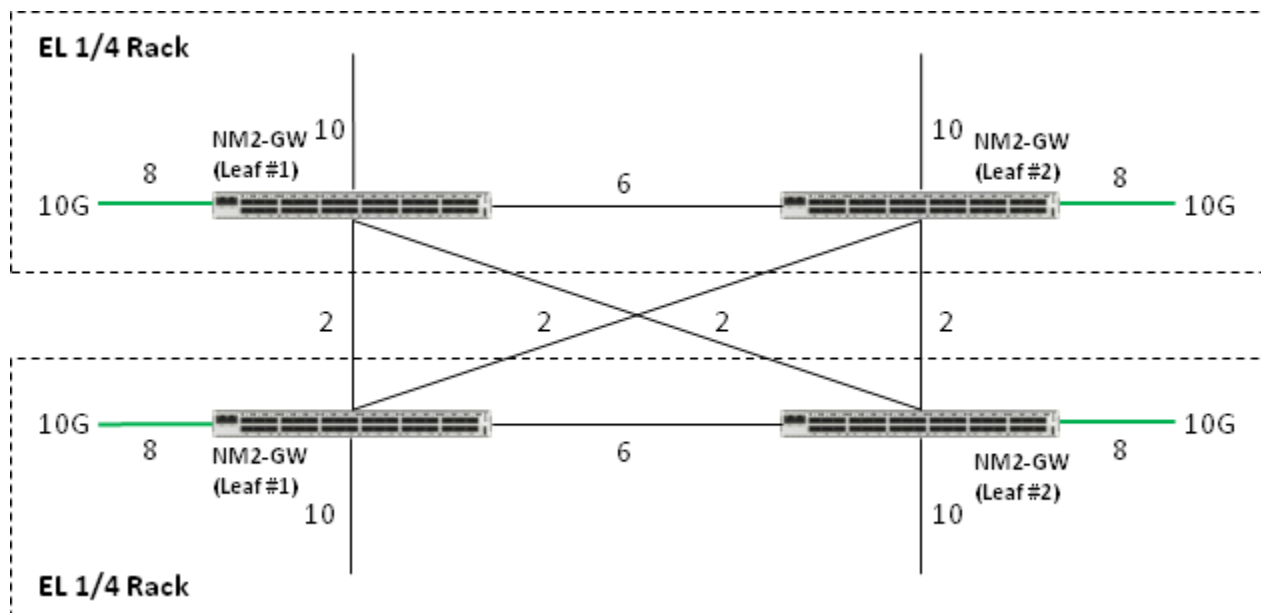


In Figure A-4, NM2-GW represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches)

A.5 Connecting Two Exalogic Quarter Racks

Figure A-5 illustrates how two Exalogic quarter racks are connected on the same InfiniBand fabric.

Figure A-5 Two Exalogic Quarter Racks

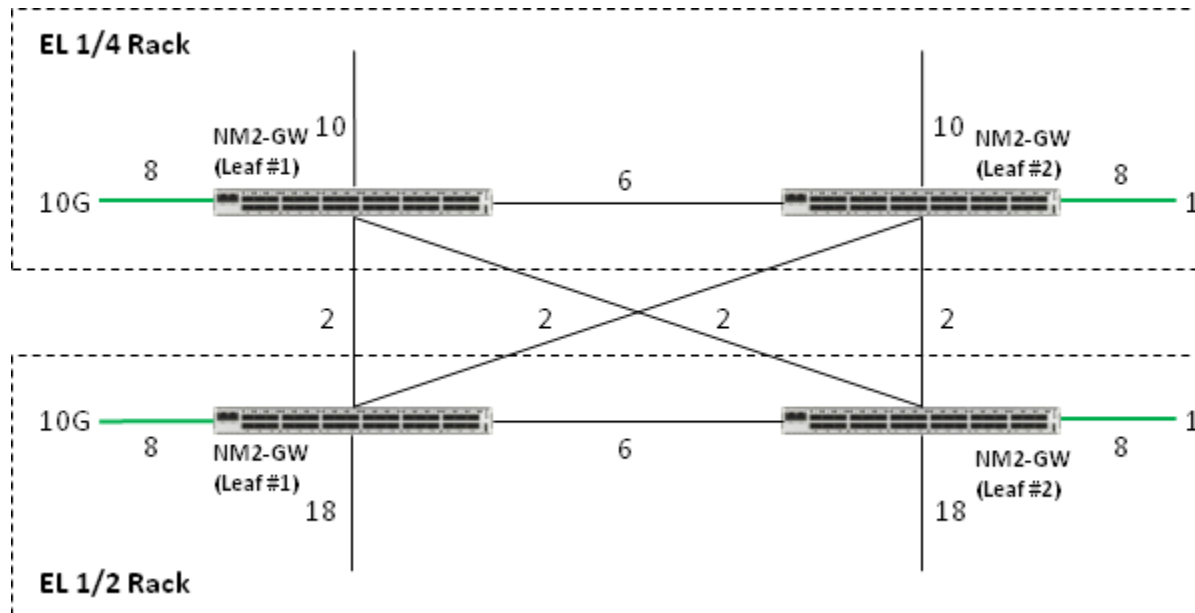


In [Figure A-5](#), **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches).

A.6 Connecting an Exalogic Quarter Rack and an Exalogic Half Rack

[Figure A-6](#) illustrates how an Exalogic quarter rack is connected to an Exalogic half rack on the same InfiniBand fabric.

Figure A-6 Exalogic Quarter Rack and Exalogic Half Rack

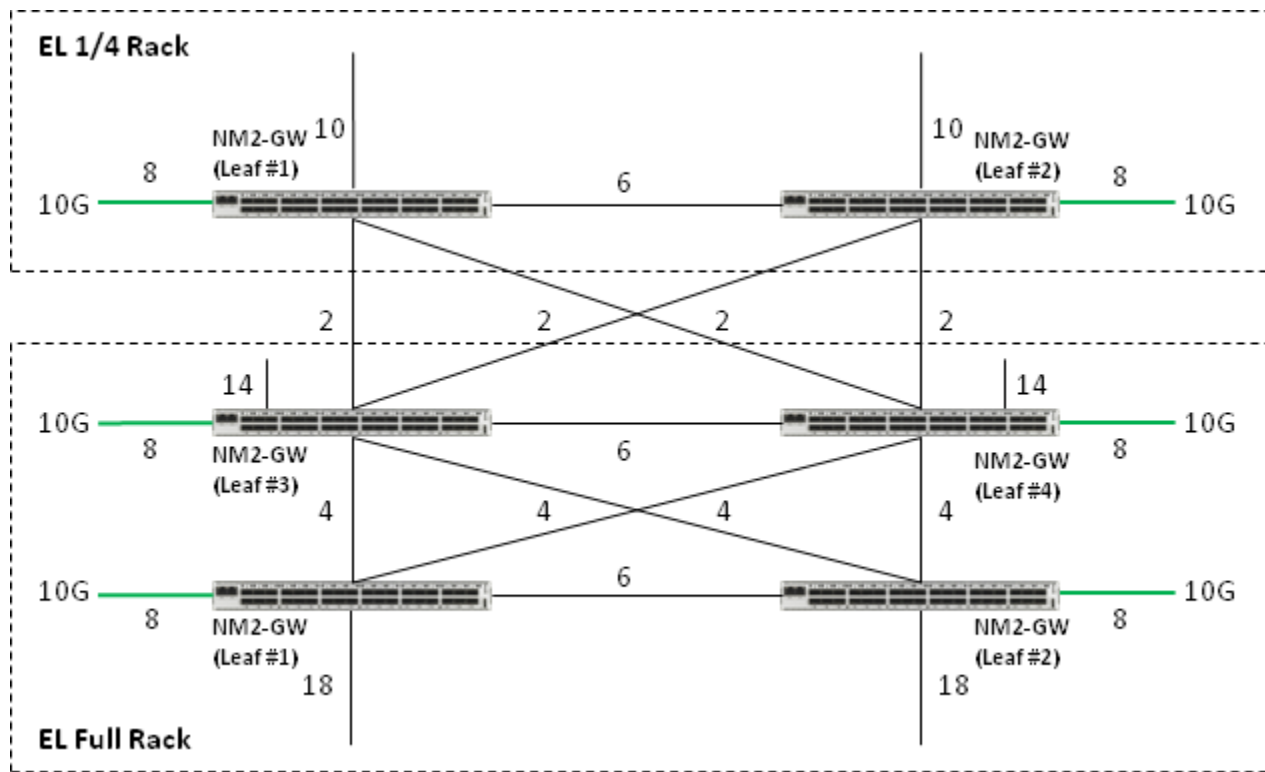


In [Figure A-6](#), **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches).

A.7 Connecting an Exalogic Quarter Rack and an Exalogic Full Rack

[Figure A-7](#) illustrates how an Exalogic quarter rack is connected to an Exalogic full rack on the same InfiniBand fabric.

Figure A-7 Exalogic Quarter Rack and Exalogic Full Rack

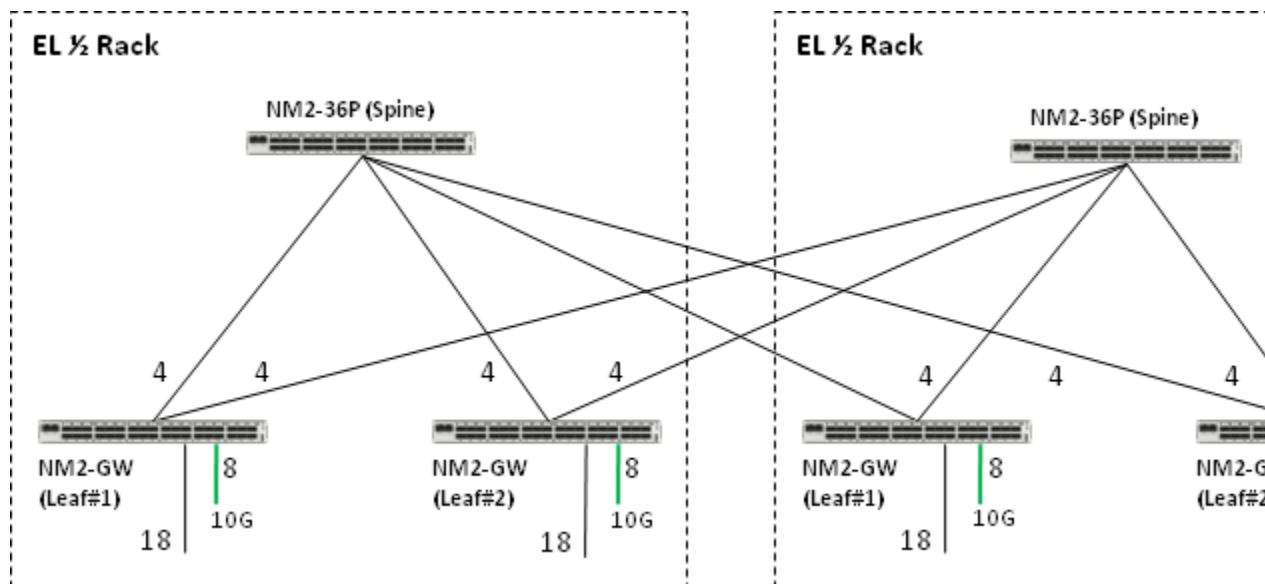


In Figure A-7, NM2-GW represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches)

A.8 Connecting Two Exalogic Half Racks

Figure A-8 illustrates how two Exalogic half racks are connected on the same InfiniBand fabric.

Figure A-8 Two Exalogic Machine Half Racks



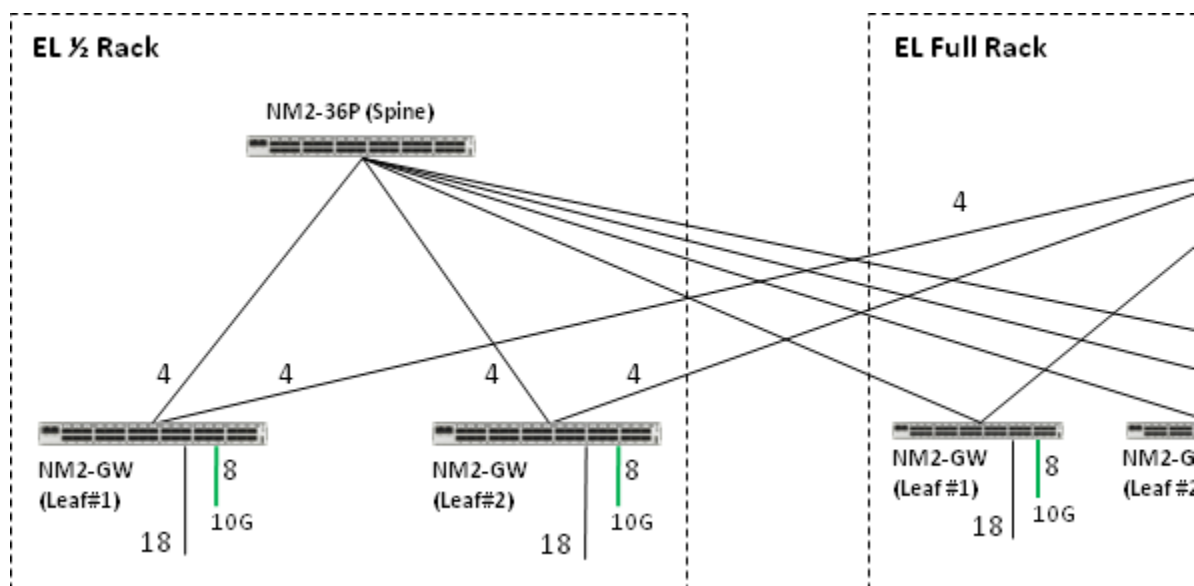
In [Figure A-8](#), **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches). **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36 (spine switch).

In this configuration, four up-links from the gateway switch (leaf switch) are cabled to the Sun Datacenter InfiniBand Switch 36 (spine switches). Each leaf switch is connected to each spine switch.

A.9 Connecting an Exalogic Half Rack and an Exalogic Full Rack

[Figure A-9](#) illustrates how an Exalogic half rack is connected to an Exalogic full rack on the same InfiniBand fabric.

Figure A-9 Exalogic Half Rack and Exalogic Full Rack



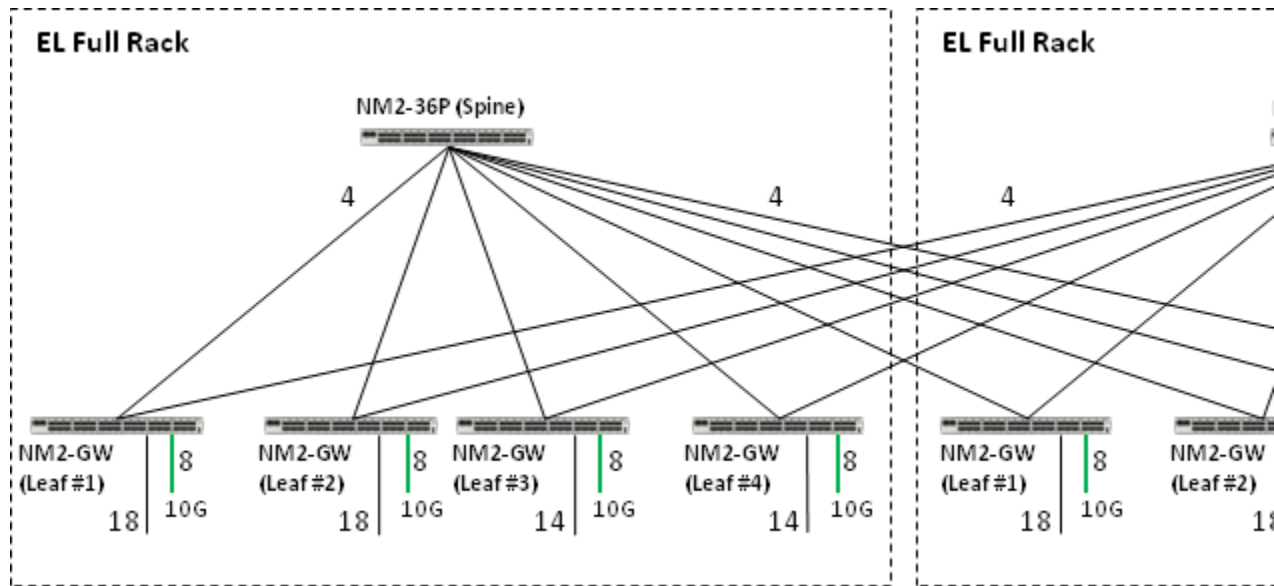
In [Figure A-9](#), **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches). **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36 (spine switch).

In this configuration, six up-links from the gateway switch (leaf switch) are cabled to the Sun Datacenter InfiniBand Switch 36 (spine switches). Each leaf switch is connected to each spine switch.

A.10 Connecting Two Exalogic Full Racks

[Figure A-10](#) illustrates how two Exalogic full racks are connected on the same InfiniBand fabric.

Figure A-10 Two Exalogic Full Racks



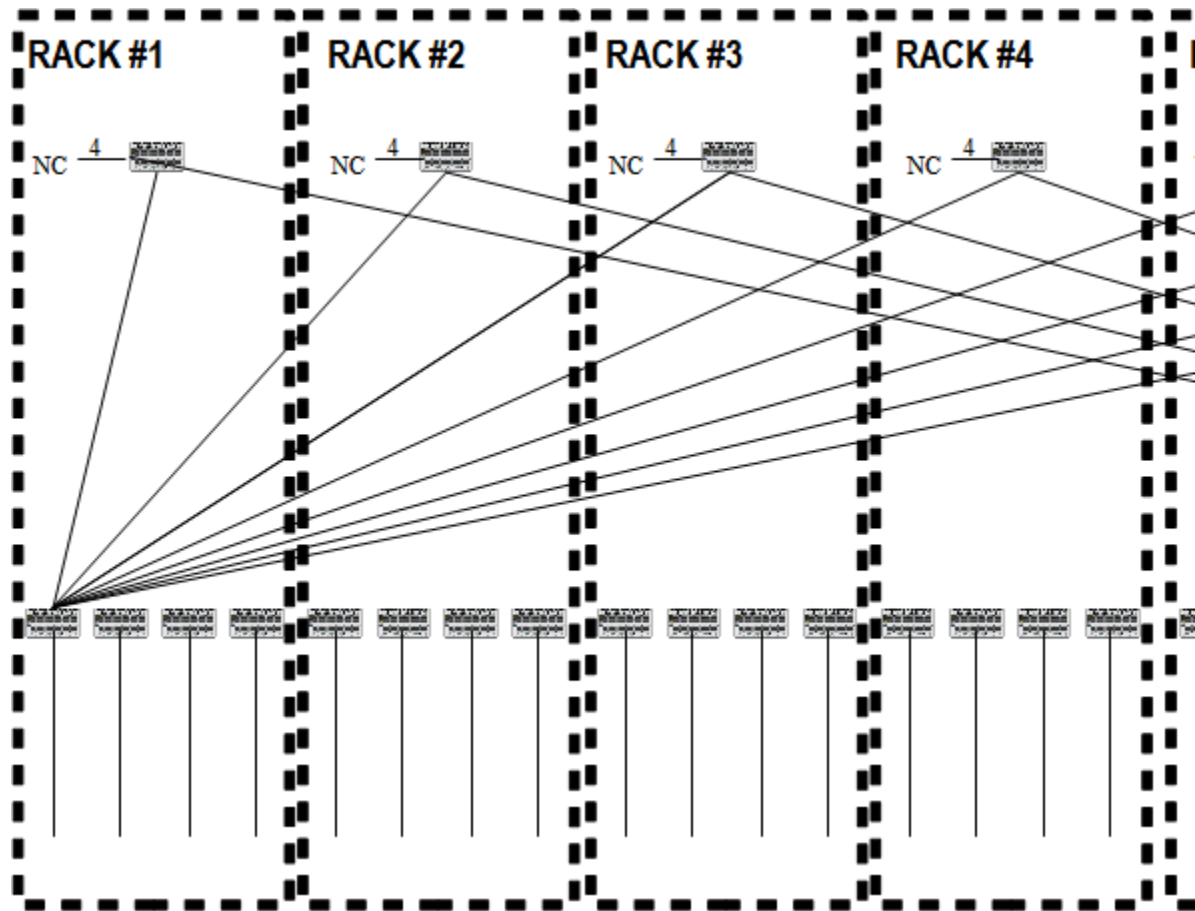
In [Figure A-10](#), **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches). **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36 (spine switch).

This scenario is explained in detail in [Connecting Two Exalogic Machine Full Racks Together](#). It is included in this appendix for the sake of completeness.

A.11 Connecting Eight Exalogic Full Racks

[Figure A-11](#) illustrates how eight Exalogic full racks are connected on the same InfiniBand fabric.

Figure A-11 Eight Exalogic Full Racks



In [Figure A-11](#), each leaf switch is connected to each spine switch (1 cable per leaf switch per spine switch).

B

Multirack Cabling Diagrams for Exalogic-to-Exadata Scenarios

This appendix contains multirack cabling diagrams for the Exalogic-to-Exadata scenarios listed in [Table B-1](#).

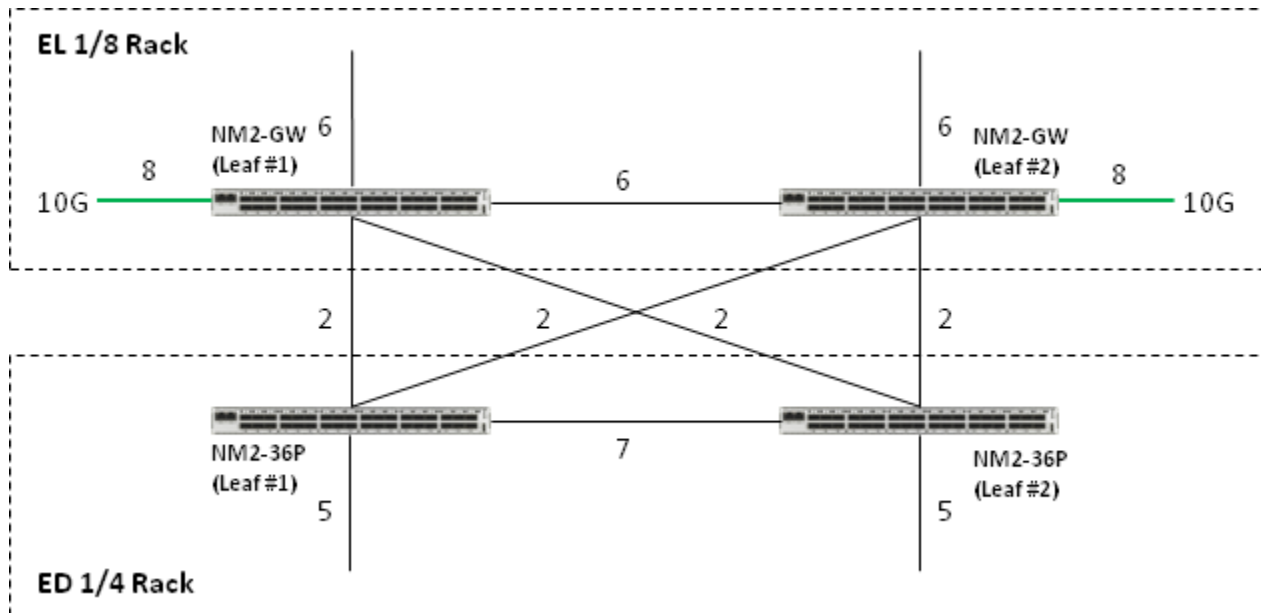
Table B-1 Exalogic-to-Exadata Multirack Cabling Scenarios

Exalogic Machine Rack Type	Exadata Database Machine Rack Type	Section
1/8	1/4	Connecting an Exalogic Eighth Rack and an Exadata Quarter Rack
1/8	1/2	Connecting an Exalogic Eighth Rack and an Exadata Half Rack
1/8	Full	Connecting an Exalogic Eighth Rack and an Exadata Full Rack
1/4	1/4	Connecting an Exalogic Quarter Rack and an Exadata Quarter Rack
1/4	1/2	Connecting an Exalogic Quarter Rack and an Exadata Half Rack
1/4	Full	Connecting an Exalogic Quarter Rack and an Exadata Full Rack
1/2	1/4	Connecting an Exalogic Half Rack and an Exadata Quarter Rack
1/2	1/2	Connecting an Exalogic Half Rack and an Exadata Half Rack
1/2	Full	Connecting an Exalogic Half Rack and an Exadata Full Rack
Full	1/4	Connecting an Exalogic Full Rack and an Exadata Quarter Rack
Full	1/2	Connecting an Exalogic Full Rack and an Exadata Half Rack
Full	Full	Connecting an Exalogic Full Rack and an Exadata Full Rack

B.1 Connecting an Exalogic Eighth Rack and an Exadata Quarter Rack

[Figure B-1](#) illustrates how an Exalogic eighth rack and an Exadata quarter rack are connected on the same InfiniBand fabric.

Figure B-1 Exalogue Eighth Rack and Exadata Quarter Rack

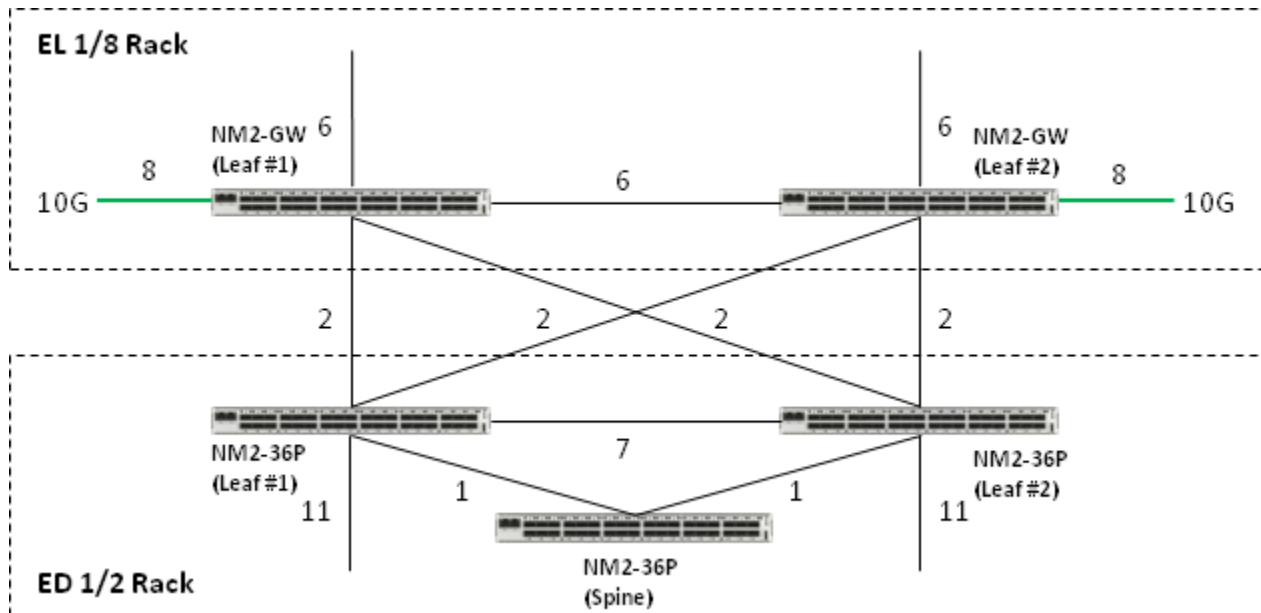


In Figure B-1, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

B.2 Connecting an Exalogue Eighth Rack and an Exadata Half Rack

Figure B-2 illustrates how an Exalogue eighth rack and an Exadata half rack are connected on the same InfiniBand fabric.

Figure B-2 Exalogue Eighth Rack and Exadata Half Rack

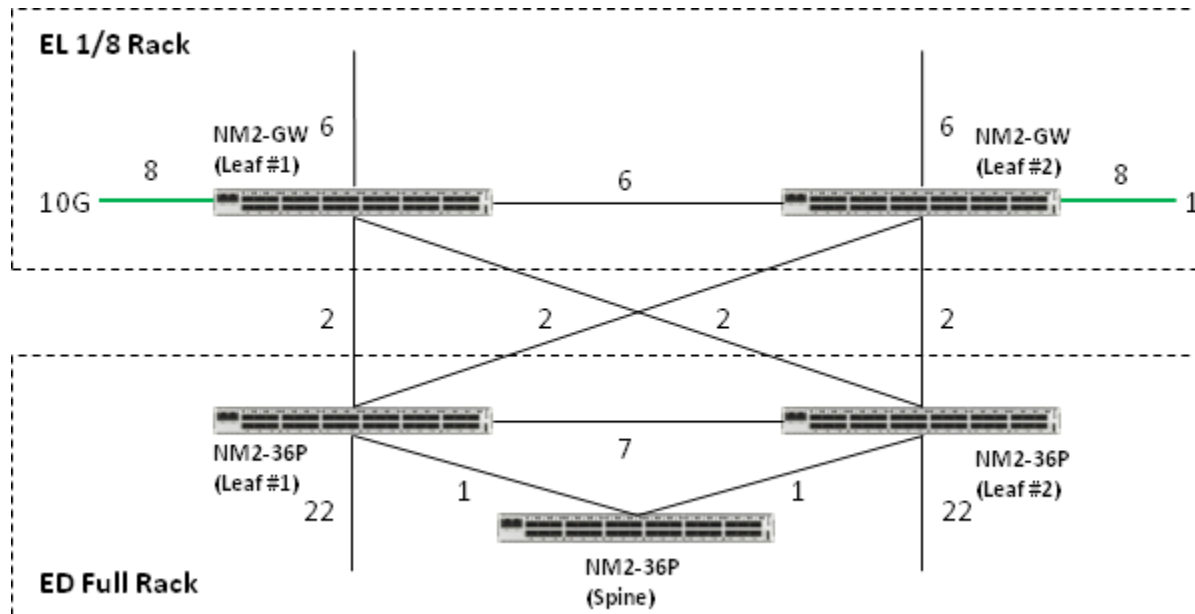


In Figure B-2, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

B.3 Connecting an Exalogic Eighth Rack and an Exadata Full Rack

Figure B-3 illustrates how an Exalogic eighth rack and an Exadata full rack are connected on the same InfiniBand fabric.

Figure B-3 Exalogic Eighth Rack and Exadata Full Rack

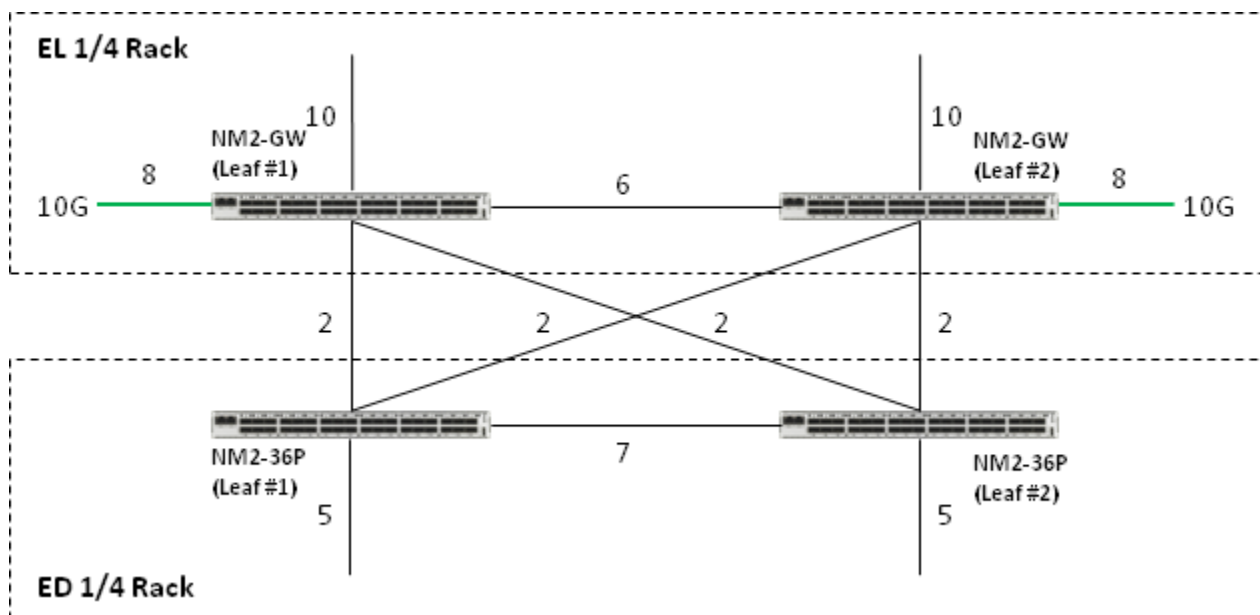


In Figure B-3, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

B.4 Connecting an Exalogic Quarter Rack and an Exadata Quarter Rack

Figure B-4 illustrates how an Exalogic quarter rack and an Exadata quarter rack are connected on the same InfiniBand fabric.

Figure B-4 Exalogic Quarter Rack and Exadata Quarter Rack



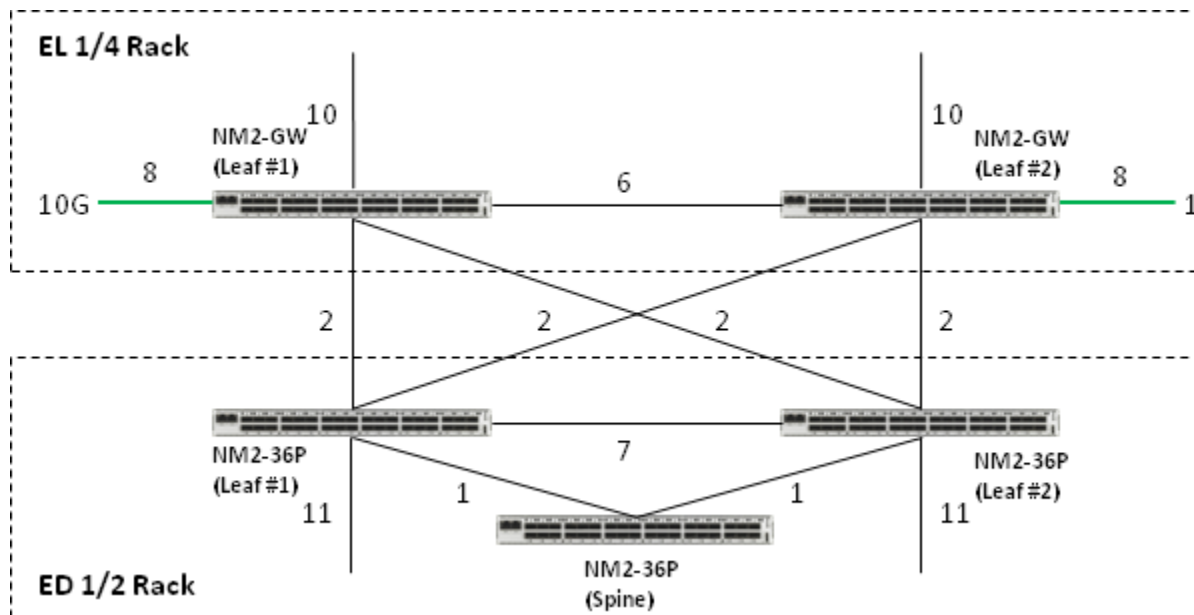
In Figure B-4, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

This scenario is explained in detail in [Connecting an Exalogic Machine Quarter Rack and an Exadata Database Machine Quarter Rack](#). It is included in this appendix for the sake of completeness.

B.5 Connecting an Exalogic Quarter Rack and an Exadata Half Rack

Figure B-5 illustrates how an Exalogic quarter rack and an Exadata half rack are connected on the same InfiniBand fabric.

Figure B-5 Exalogic Quarter Rack and Exadata Half Rack

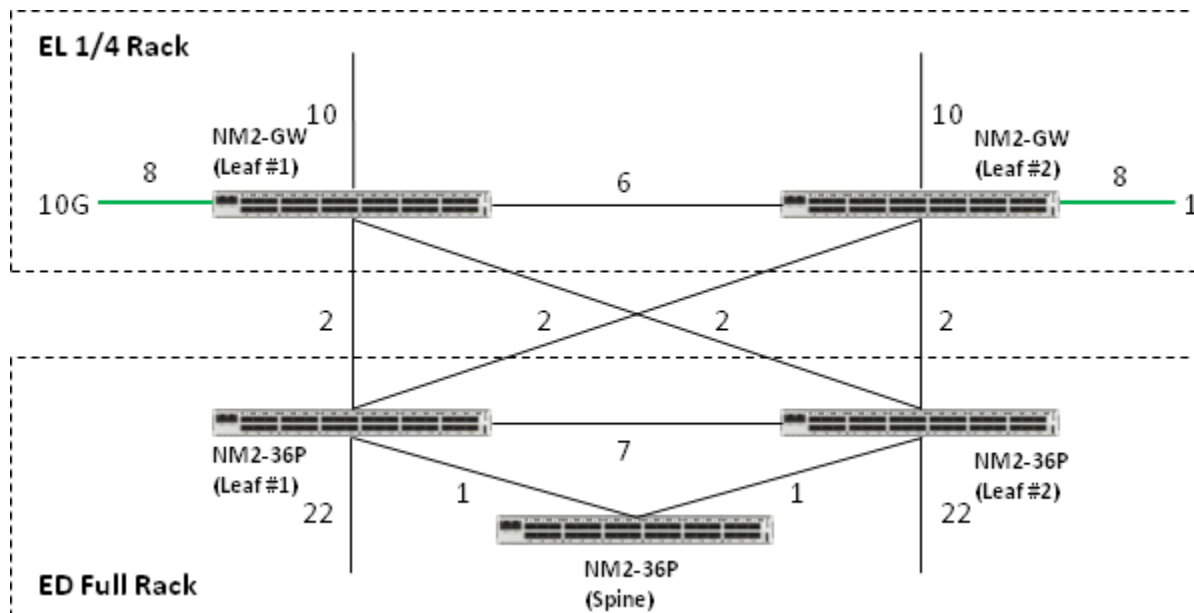


In Figure B-5, NM2-GW represents a Sun Network QDR InfiniBand Gateway Switch. NM2-36P represents a Sun Datacenter InfiniBand Switch 36.

B.6 Connecting an Exalogic Quarter Rack and an Exadata Full Rack

Figure B-6 illustrates how an Exalogic quarter rack and an Exadata full rack are connected on the same InfiniBand fabric.

Figure B-6 Exalogic Quarter Rack and Exadata Full Rack

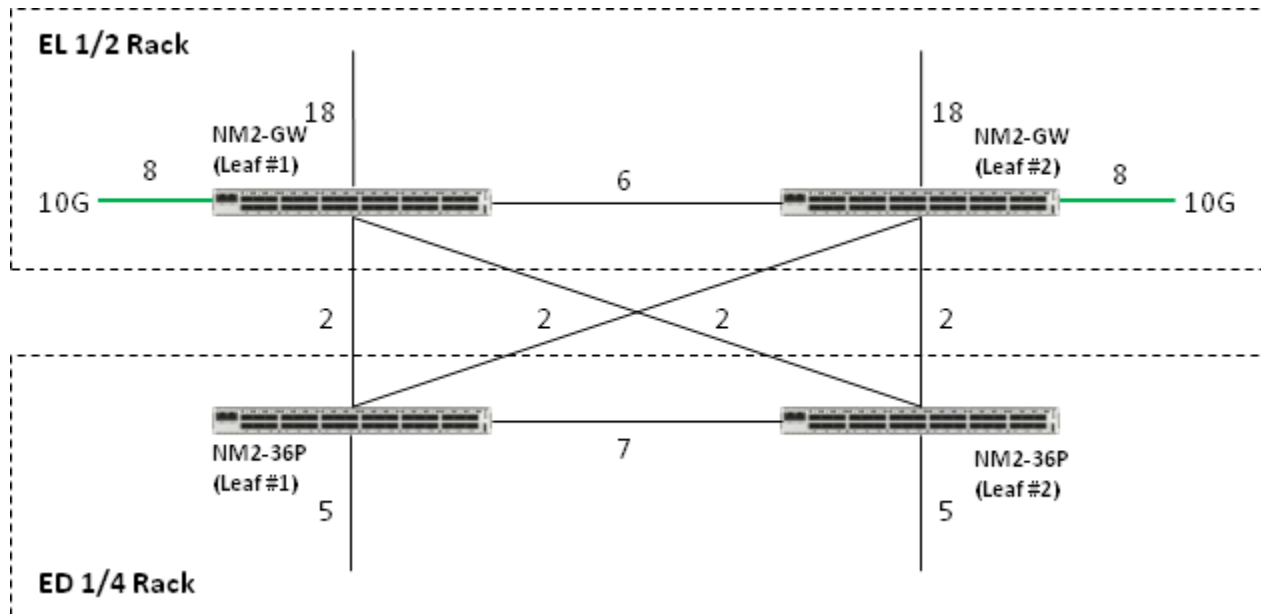


In Figure B-6, NM2-GW represents a Sun Network QDR InfiniBand Gateway Switch. NM2-36P represents a Sun Datacenter InfiniBand Switch 36.

B.7 Connecting an Exalogic Half Rack and an Exadata Quarter Rack

Figure B-7 illustrates how an Exalogic half rack and an Exadata quarter rack are connected on the same InfiniBand fabric.

Figure B-7 Exalogic Half Rack and Exadata Quarter Rack

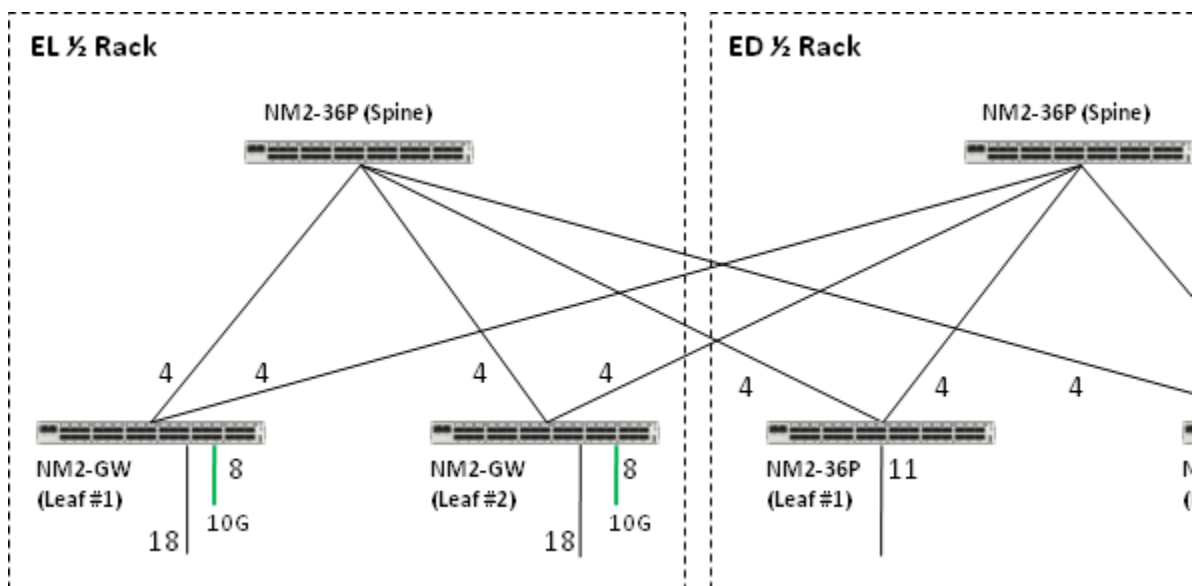


In Figure B-7, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

B.8 Connecting an Exalogic Half Rack and an Exadata Half Rack

Figure B-8 illustrates how an Exalogic half rack and an Exadata half rack are connected on the same InfiniBand fabric.

Figure B-8 Exalogic Half Rack and Exadata Quarter Rack

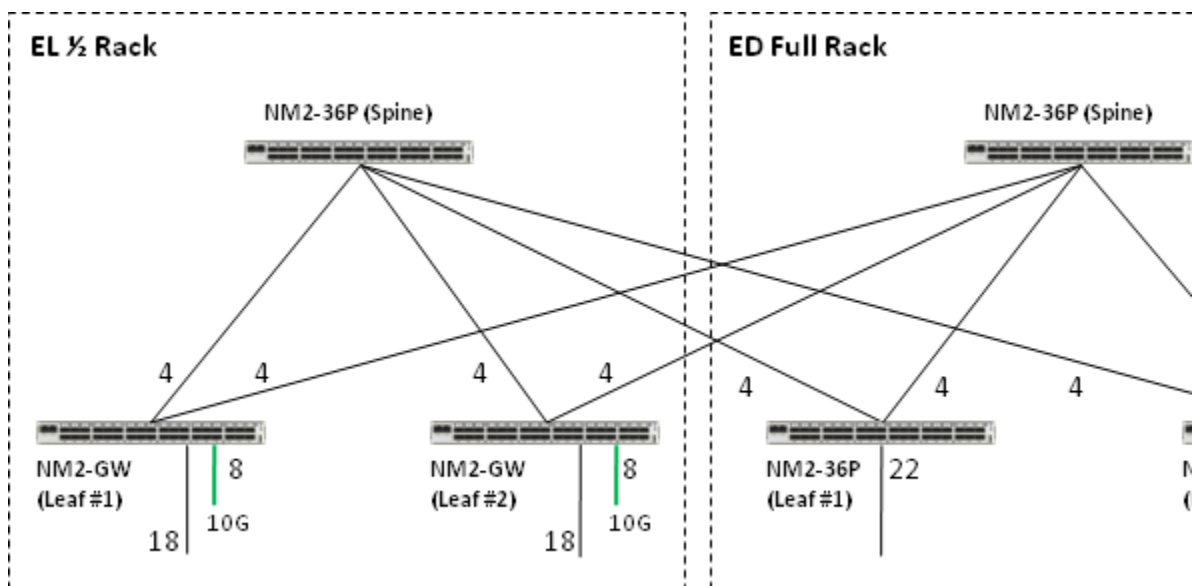


In Figure B-8, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

B.9 Connecting an Exalogic Half Rack and an Exadata Full Rack

Figure B-9 illustrates how an Exalogic half rack and an Exadata full rack are connected on the same InfiniBand fabric.

Figure B-9 Exalogic Half Rack and Exadata Full Rack

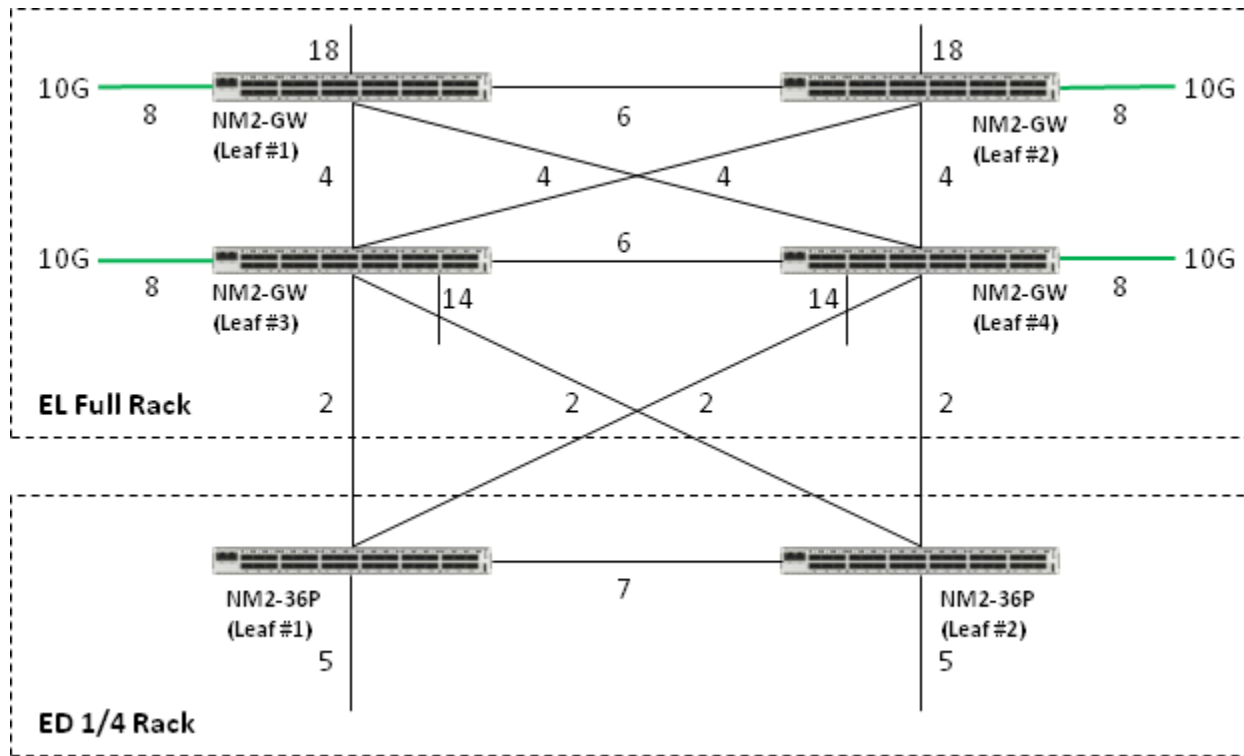


In Figure B-9, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

B.10 Connecting an Exalogic Full Rack and an Exadata Quarter Rack

Figure B-10 illustrates how an Exalogic full rack and an Exadata quarter rack are connected on the same InfiniBand fabric.

Figure B-10 Exalogic Full Rack and Exadata Quarter Rack

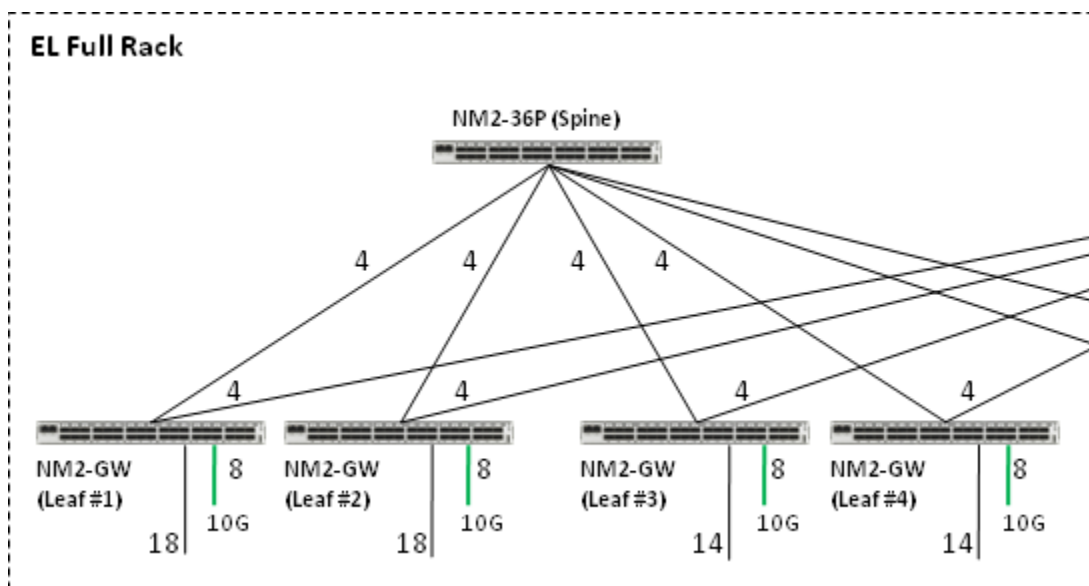


In Figure B-10, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

B.11 Connecting an Exalogic Full Rack and an Exadata Half Rack

Figure B-11 illustrates how an Exalogic full rack and an Exadata half rack are connected on the same InfiniBand fabric.

Figure B-11 Exalogic Full Rack and Exadata Half Rack

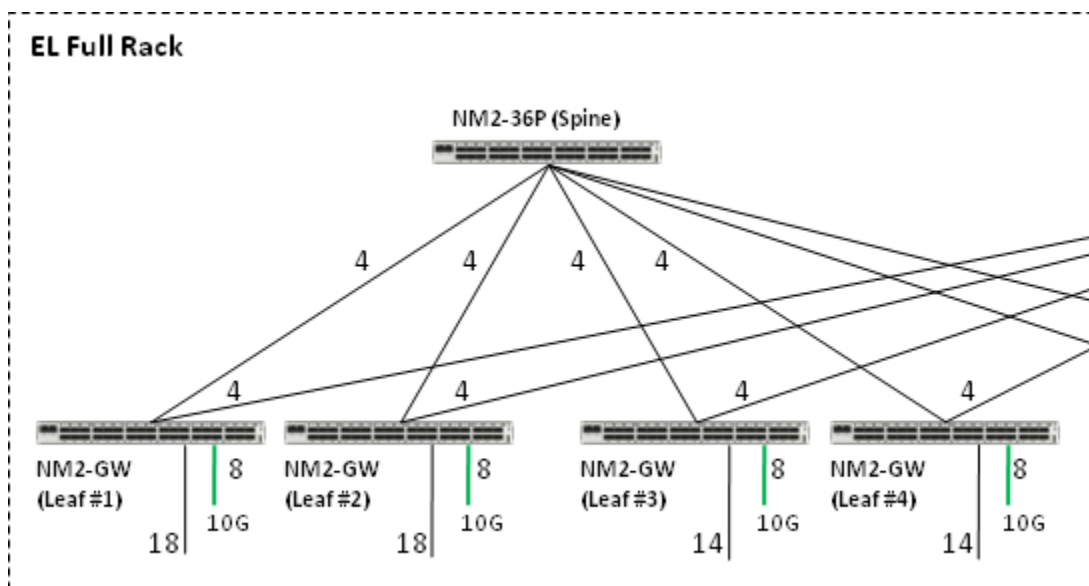


In Figure B-11, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch. **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36.

B.12 Connecting an Exalogic Full Rack and an Exadata Full Rack

Figure B-12 illustrates how an Exalogic full Rack and an Exadata full rack are connected on the same InfiniBand fabric.

Figure B-12 Exalogic Full Rack and Exadata Full Rack



In Figure B-12, **NM2-GW** represents a Sun Network QDR InfiniBand Gateway Switch (leaf switches). **NM2-36P** represents a Sun Datacenter InfiniBand Switch 36 (spine switch).

In this configuration, the cabling within the Exadata machine is preserved. Only the traffic on the Exalogic machine and the Exalogic-to-Exadata traffic use the spine switches. The Exadata machine's local traffic is restricted to the leaf switches of the Exadata machine. InfiniBand subnets can be created to separate traffic without any re-cabling.

This scenario is explained in detail in [Connecting an Exalogic Machine Quarter Rack and an Exadata Database Machine Quarter Rack](#). It is included in this appendix for the sake of completeness.

Index

M

Multi-rack cabling

Multi-rack cabling (*continued*)
overview, [1-1](#)

